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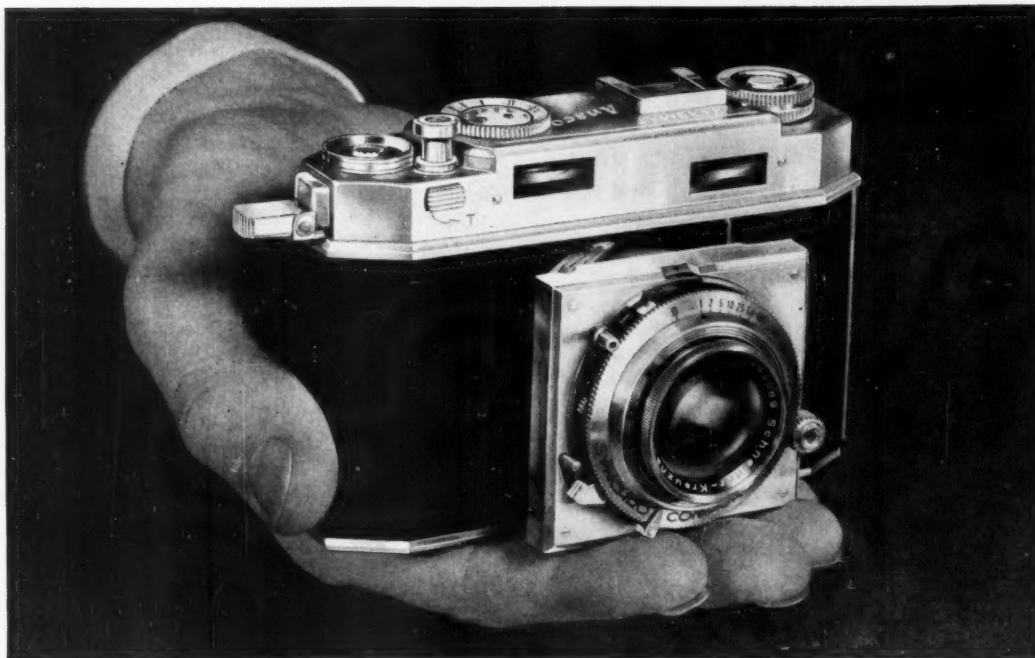
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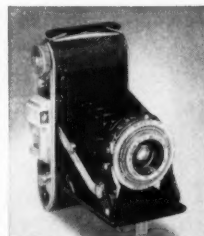
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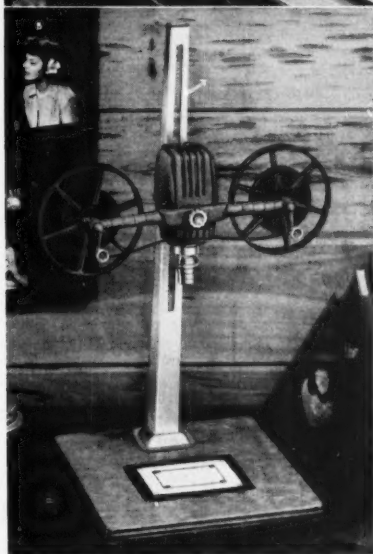
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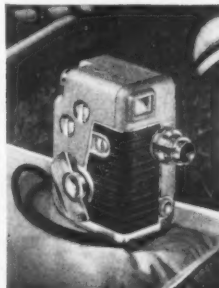
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Our April Cover



Cover girl this month is attractive Berenice Lipson, competent New York concert pianist. She models somewhat against her will, preferring to concentrate on her music studies. Photograph by Harold Blackstone.

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Notes From A Laboratory

By Herbert C. McKay



INVISIBLE RADIATION

THERE seems to be some confusion about the photographic effects of invisible radiation, both infrared and ultraviolet. This arises largely from the difference between theory and fact. Theory deals largely with strict limitations, sharp lines of demarcation, but when translated to fact these limitations turn out to be simply arbitrary lines which represent the mean point of a change.

For example, if you travel southward through Mexico, you cross the Tropic of Cancer. One yard north of that line and you are in the temperate zone; one yard south of it and you are in the tropics. You can cover the distance in a single step. Do you think there is any actual change in the climate as you step from one zone to the next? If you go on to Mexico City, you find a climate which is more temperate than many places in the temperate zone although it is well within the tropics. At the same time if you travel from the pole toward the equator there will be a gradual increase in temperature. Our maps reflect this overall change with less regard to actual conditions in any one place. Yet to the people living in that place the local conditions are of paramount importance.

This same thing is true of many applied sciences. Theory lays out the overall facts, generalities, mean conditions; but in practice it seems as though local conditions always enforce a departure from the theoretical mean. This leads to many paradoxes which confuse beginners in photography.

For example, it is taught, as a generality, that optical glass is opaque to ultraviolet radiation. That means that no UV can pass through the lens. At the same time haze filters are sold for the purpose of keeping the UV out of the camera to obtain better color pictures. If no UV can pass through the lens, why should there be a special filter to keep it out?

Of course the answer is that UV does in fact pass through the lens and in sufficient quantity to affect the film. As a matter of fact it is impossible to make any kind of filter which will cut off all the UV and admit *all* of the visible light. This is impossible simply because UV is the radiation immediately adjacent *visible* light and that boundary changes with the individual. Some people can actually see much farther into the so-called UV band than

others. Hence, the actual boundary changes with the individual and a filter which would match one vision would not match another.

Much the same thing is true of the camera lens. Some lenses pass a great deal of UV while others pass relatively little. Some old lenses which are distinctly yellow might even block a part of the extreme visible violet. This is the action of many haze filters. One haze filter may cut off just above the average UV boundary, while another may cut out some of the extreme visible violet. Both types work very well. It is unfortunate that a few haze filters have been offered from time to time which have been made from ordinary glass, the maker evidently accepting the statement that ordinary glass does not pass the UV.

The presence of UV in normal daylight is not of much concern because it is so easily controlled. On the contrary there are many times when it is desired to make use of UV in photography. Many of the more spectacular effects can be obtained only through the use of the short-wave UV. This introduces problems.

Short-wave UV is potentially dangerous and should not be used unless one is thoroughly familiar with the means of protection. However, a great deal of interesting work can be done with the long-wave type which is just over the boundary from visible light. This radiation is not dangerous, it does not require special quartz optics (it passes the normal camera lens very well) and it is much easier to focus sharply or near sharply.

A convenient source of light is the mercury arc enclosed in a quartz tube and this in turn in a glass envelope. This envelope screens out the dangerously short waves. The same thing in a special envelope of Uviol glass transmits far more UV and must be used with correspondingly greater caution.

Such lamps are usually provided with a deep violet screen which does transmit a very small amount of visible light but not enough to have serious effect upon the film. It is also desirable to have a good grade (camera) filter of this same violet color.

When some objects are illuminated by UV they glow with a variety of colors; gold, white, blue, green, red and so on. These are actual, visible colors and are



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produced by fluorescence under the UV. Thus if making the photograph of some object, say a specimen of calcite, you may (A) make a normal photograph of the visual appearance of this specimen. (B) You may make a photograph of the fluorescence or (C) you may make a true UV photograph of it.

There is no need to go into details of (A) as this is commonplace photography.

For step (B) the UV lamp is provided with its violet filter and the light directed upon the specimen. It will appear to be self-luminous, usually appearing altogether differently from its normal light aspect. While this subject is photographed just as usual, all light other than the UV should be excluded. The fluorescent light is not very brilliant, although it appears to be so in the dark. On the contrary it is a type of luminosity and as such requires less exposure than an object which is not luminous. These two contrary factors make exposure tests imperative. But once the exposure is determined it will be more or less constant as long as the external conditions (such as light distance) remain the same.

Fluorescent effects make beautiful color subjects and they are easy to photograph. One of the most beautiful subjects I ever photographed this way was a pair of "museum quality" Premier diamonds. (Diamonds from the old Premier mine fluoresce very strongly, as a rule, in deep blue color.)

It is possible to make such photographs using no special technique other than the light used. But if this is done the picture is not necessarily that of the true fluorescence. There will also be the actual UV picture added to the fluorescence one. This sometimes degrades the effect. To avoid this the camera lens may be covered with a yellow filter, not too light in density. Thus the violet filter in the lamp removes most of the visible light, the fluorescent light is actually generated in the specimen and the yellow filter at the camera lens removes the UV.

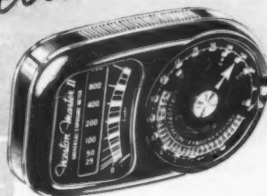
Now note that in the whole series substantially all of the visible light as well as all the UV has been removed. As the film is insensitive to IR which is not present anyway ALL of the original light has been removed as well.

Step (C) is even easier. The violet filter, placed over the lens, is not used in the lamp house. This must, of course, be a photographic quality filter. The mercury light is used for illumination which is now visually intense and bluish-white in color. Too much contact with this direct radiation should not be allowed in order to avoid sunburn. It will be noted that the fluorescence effect is masked by the intense light and is only partially visible, if at all.

In step (B) visible light actually was being used. Now that UV is being used for making the picture, it is necessary to

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Notes From A Laboratory

do some casting about for focus. Place a blue filter, such as tricolor C, over the lens and try to focus (with a visual focusing camera). Use as deep a filter as possible. Then stop down to f/16 and make the exposure. A satisfactory focus may result, but probably not. UV has a shorter wave length than visible violet, and as lenses are chromatically corrected for visible light only, the UV image will be out of focus. Test exposures are advised. The focus should be set with blue filter and the working distance shortened a very little in successive exposures. A fair definition can be obtained. However, an aperture of any size cannot be used if good results are anticipated. Lens correction is not calculated for UV regardless of focus compensation.

In all the field of UV there probably will not be found many subjects of great interest outside the fluorescence field. In this field, however, there is plenty to keep one busy for a long time.

The requirements are simple: the light source may be any UV lamp. For photography the best is the mercury are enclosed within a bulb about the size of the T-20, 500-watt projection bulb. This lamp requires a transformer and because of the nature of the light and the filtering required it is necessary to have the lamp in a housing. An enclosed spotlight or an old projector housing could serve this purpose. The outfit complete with lamp, transformer and housing usually costs about \$25.

Subjects are not hard to find. Many minerals, most oils and many chemicals fluoresce as well as a number of living organisms. Quinine fluoresces vividly and a "secret" message written between typed lines using a solution of quinine will produce a message which, normally invisible, under UV is clearly visible and photographs well.

The most spectacular objects are the fluorescing minerals and gem stones sold by mineral supply companies. For experimental work there are fluorescing "inks" available in several colors.

There is perhaps even greater potential experimentation in the field of infrared but this we shall leave for a future column.

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The new RCA "light surround" motion picture screen recently installed at New York's Plaza Theater has been hailed by members of the industry as a major advance in the pictorial presentation of motion pictures. Use of the screen has resulted in truer color hues and spectators tend to have a greater sense of actually being present at the scene of activity.

The screen has side and top panels which, picking up light diffused from the image, eliminate the familiar black masking effect. With use of the screens groping for seats during shows may be entirely eliminated in the future.



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SPEEDLIGHT

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"I would like information on how to reduce the charging time of my speedlight unit to 3 seconds."

G. W.—Providence, R. I.

If your unit is a-c operated it probably has a limiting resistor of from 10,000 to 15,000 ohms between rectifier tube and capacitors. Replacing this resistor with one having a value of between 1000 and 2500 ohms will usually reduce the charging time. Replacement of the rectifier tube may also help if the emission of the present tube has decreased because of long usage. The present transformer replaced with one having the same electrical characteristics but higher milliamperage secondary rating will also pep up the charging time.

Portable units present more problems because of the limited power available. If the transformer is replaced by one drawing more primary current, the charging time will be decreased but so would the number of flashes available from one battery charge. If two capacitors are employed, one may be removed from the circuit. The charging time would be halved as would, of course, the light output. The difference in light output could be compensated for by using a larger lens opening or extending development time.

"I have to replace the 2x2A rectifier tube in my a-c speedlight at frequent intervals. How may this be corrected?"

M. J.—Ft. Worth, Texas

The heater voltage may be higher than the recommended 2.5 volts. This would cause early burn-out or impaired emission because of the excessively high cathode temperature. If a volt-meter reading made with the tube in the circuit shows higher than 2.5 volts, a resistor should be added. It should be connected in series and be of the proper value to correct the over-voltage.

There is also a possibility that the tube is being overloaded during the early portion of the charging cycle. The lack of a limiting resistor, connected between rectifier and capacitors, could cause this as could transformer and capacitors which produce an operating condition exceeding the tube rating. The addition of another 2x2A in parallel or replacement with an 866 will correct the latter difficulty.

"I get only about twenty flashes from my speedlight before the batteries need recharging. They were not charged for a six months' period when I was away. Could this be the cause of the trouble?"

C. G.—San Francisco, Calif.

That was very, very bad and is undoubtedly the cause of your trouble. It is likely that the plates in the battery are hopelessly sulphated and the ampere hour capacity is but a small fraction of the original rating. A new set of batteries is the best remedy. They should be recharged every two or three weeks when not in use and the liquid level kept to the indicating line by the addition of distilled water. A medicine dropper, obtainable from a drug store, is ideal for the latter purpose.

"Would you advise several speedlight flashes, say four or six, for color interiors?"

W. R.—Philadelphia, Pa.

Yes, and more if necessary. For maximum depth of field it is necessary to use a small diaphragm aperture. In this case, where there are no moving subjects, the shutter may be opened and the speedlight flashed the required number of times to provide adequate exposure. Most even illumination will be obtained by directing the reflectors at various angles and by giving extra flashes to darker areas and to those farther from the lighting equipment.

This procedure may be used with either pan or color films for any still life subject.

"Please advise if the portable speedlight described in April 1951 issue of American Photography can be used with the ordinary flash outlets on the Kine Exakta II camera."

R. H.—North Adams, Mass.

Yes, that speedlight unit can be synchronized very reliably to the Kine Exakta II camera having shutter connections for flashbulbs. As this camera has a focal plane shutter it is, of course, necessary to use only the shutter speeds which employ curtain openings which are full film size. Speeds of 1/50 sec. and slower may be successfully synchronized.

(Continued on page 8)

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"I have a 110 watt-second four light portable and find it necessary to work at f/5.6 with color film as I do not use all the lights on the front of the subject. Am delighted with the saturated colors obtained without a filter, but wish to use a smaller f-stop opening. Can more capacitors be added or do you have other suggestions?"

M. R.—Los Angeles, Calif.

If the unit will be used extensively for black and white work and portability is an important factor, the "booster pack" should be in a separate housing.

The two units are connected together with a suitable arrangement of plugs, sockets and cable when the extra power is required. The "booster pack" may be quickly disconnected when the speedlight is to be carried and the available power is adequate for the expected application.

Most radio supply houses carry a stock of standard cases. One may be selected to fit the capacitors, allowing plenty of space at the top where the capacitor terminals are located and where a socket for the connecting cable will be mounted. Recessed cable connectors should be used so that live terminals will not be exposed when the connecting cable is unplugged.

One or two additional capacitors (20 mfd 2500v) may be connected in parallel to the two now incorporated in the unit.

The design of the "booster pack" is a matter of personal choice and would be influenced by the type work being done. For example, if usage was limited almost entirely to color, the additional pack could be permanently attached to the base of the speedlight unit. The total weight would be increased by about eight pounds with the addition of two capacitors. While the charging time would be doubled, this operating condition would not be considered adverse for color exposures as they are usually made with more deliberation.

Many speedlight units have provisions for connecting two similar units together to operate as one. This arrangement provides the required advantage of additional power, and also more lights if desired. The units can be quickly separated for individual use and their appearance has not been affected by the addition of auxiliary equipment.

"I understand a change was made recently in the federal tax on speedlights. What are the details on this?"

C. P.—Cleveland, Ohio

The federal excise tax of 25 percent on speedlight equipment was eliminated completely November 1, 1951. Apparently the only condition where the tax is applicable would be where a camera manufacturer who also made speedlight units, sold camera and speedlight actually attached together.

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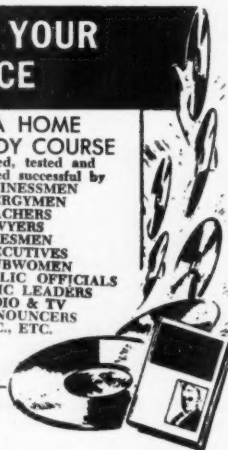
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DU PONT ISSUES DATA BOOK

Photographic Films, a data book recently published by Du Pont, is the first comprehensive undertaking of its kind put out by the company and should be extremely helpful to beginners, intermediates and even old hands in the field.

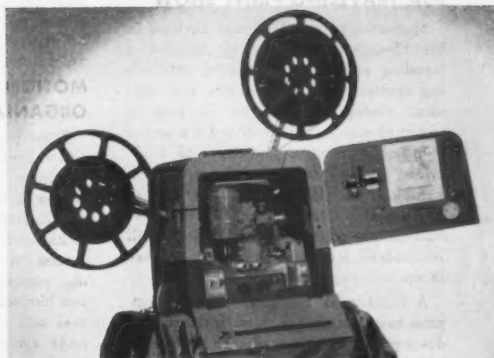
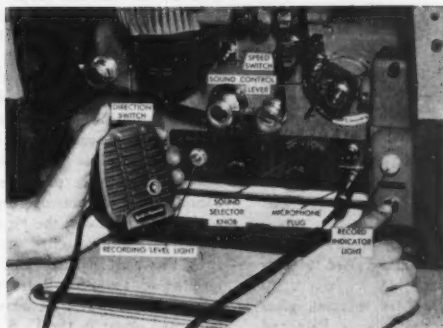
The booklet is concerned with films, papers and chemicals primarily. It also reviews some of the fundamentals of picture making, lighting, exposure, film sensitometry and selection.

In the film data section, cause, prevention and cure of common negative results are charted. Eight types of film are thoroughly discussed with exposure indexes and guides, filter factors and processing details and other useful data being given for each.

In the formula section developers, fixers, stop baths, intensifiers, reducers and other data are presented in detail.

The book is 84 pages and is priced at 35 cents. Its format with charts and pertinent illustrations is to be commended.

MAGNETIC SOUND-ON-FILM FOR AMATEURS



The Bell and Howell Filmosound 202 16mm optical-magnetic recording projector.

Projector's main controls, left. Threading is same as other B and H models.

No, it's *not* magic. But the new magnetic-optical recording projector, *Filmosound 202*, recently announced by Bell and Howell, packs many surprises in a single all-purpose unit now available at \$699 to amateurs interested in making "professional" motion pictures.

In addition to recording sound-on-film the projector reverses to play back recorded sound, plays and projects conventional 16mm optical sound as well as silent film, may be used as a public address system and can serve as a regular magnetic recorder.

To put sound on films a simple procedure is followed. While the film, with a magnetic edge, is being projected, desired sound—running commentary or music, for example—is recorded through a microphone (standard equipment) plugged into the projector. Playback is possible at any time by switching two switches. Should errors be made in the sound track the film may be reversed beyond the point of error and the sound easily recorded again.

In conjunction with the projector the company has developed *Soundstripe*, a process which permanently coats film for magnetic sound. This may be applied at slight cost to old silent films which, exposed at 16 frames per second, are copied on single perforated stock, then striped by the company for use with the 202. Shots taken on single perforated stock may be striped immediately after processing.

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PSA TRAVELING PRINT SHOW

Sponsored by the Technical Division of the Photographic Society of America, a traveling print show containing outstanding examples of both scientific and technical photography will be on loan to technical schools and societies for a period of about 18 months. The show, 35 16x20 prints selected from the Seventh Open Exhibit of Technical Photography (part of PSA's 1951 International Exhibition of Photography at Detroit, last October), will be available for weekly loans at no charge except one-way shipping.

A number of biological subjects comprise one group in the show. Included are: development of the human embryo, techniques of studying human tissues and other structures, photomicrographs of insects and animalcules.

Another group deals with military and armament photography and includes high speed studies, radarscope photographs and military use of wide angle and telescopic lenses.

The third group is concerned with electronics. Patterns produced by electrical discharges are recorded together with electron micrographs, autoradiographs and a special display on schlieren photography.

The show will be available for hanging

until June, 1953. Requests for hangings as well as additional details may be obtained by writing Mr. Earl R. Clark, 184 Malden St., Rochester 13, N.Y.

MOTION PICTURE CONCERN ORGANIZED IN CANADA

Trans-World Film Laboratories, Ltd., designed to handle laboratory work for the television stations proposed for the Dominion of Canada, is a new concern with headquarters in Montreal. Its facilities will include a number of services—script preparation for shorts and commercials, shooting, processing, printing, cutting, editing and film release. The company, which will deal with 16- as well as 35mm films, will make available a rental service on professional apparatus.

J. O. Lemire is president of the new company; A. Prefontaine is managing director.

TWO BRITISH FILMS RELEASED

The British Information Services announce two black-and-white 16mm sound films recently released for rental and sale.

British Infantry, a nine-minute documentary, records training of the infantry branch of the British army prior to entry into the Korean war.

Keeping the Peace, ten minutes, gives the background of the Atlantic Pact and

discusses international cooperation as a defense mechanism. Resources pooling, land-sea-air exercises, the establishing of military headquarters at Fontainebleau, NATO, White House conferences are included.

Each film rents for \$1.50 per day and sells for \$32.50. For further details contact the British Information Services, 30 Rockefeller Plaza, New York 20, N.Y.

B. ERLE BUCKLEY, FPSA



B. Erle Buckley, of New York, known throughout the East as a photographic teacher, lecturer, and judge, died January 25 in Post-Graduate Hospital, New York, after prolonged illness with heart trouble. He was 56.

For many years Buckley conducted the Studio School of Photography, and also taught classes in photography at various camera clubs throughout the East. He was well known for his "Print Clinics," which introduced audience participation into the consideration of contemporary work.

He was a Fellow of the Photographic Society of America, active member of the PSA Pictorial Division, and had been a member of the PSA Board of Directors. During World War I he served as a commissioned officer in the U. S. Navy.

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An unshielded ten-inch circular television tube is deliberately broken and the action stopped in this series of pictures from Eastman Kodak's 16mm motion picture, "Magnifying Time" (see AMPHOTO, March, page 9). The pictures, taken at 3000 frames per second, were made to demonstrate how high speed motion pictures can be used to slow down extremely fast action for analysis and study. Information about the film may be obtained from Eastman Kodak, Camera Club and School Service, Rochester 4, N.Y.



FLASHTUBE CIRCUITS REDUCE BATTERY DRAIN

Two economical dry battery circuits which operate on types of "Eveready" "R" batteries are described by P. A. Marsal for operating repeating electronic flashtubes for photography in the March issue of *Photographic Science and Technique* published by PSA.

One unit uses a 450-volt source, the other, 225 in a high efficiency voltage doubler circuit. Each unit makes use of high voltage, high capacity electrolytic

condensers. Battery conservation has been achieved by reduction in leakage current. According to the designers, a further contribution to conversion efficiency and a reduction in idling power requirement has been made possible by elimination of a transformer from the voltage doubler.

Reprints of the paper are available from the National Carbon Company, Battery Engineering Department, 30 East 42nd St., New York 17, N.Y.



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Stop and think of someone you know well . . . some favorite scene! Isn't it true that color is the key to your memories?

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Bolex L-8 f/2.8 fixed focus \$ 99.50

Argus 21 with 50mm f/3.5 coated lens and case \$ 62.10

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Voigtlander Vitessa f/2 Ultron in compur rapid, built-in rangefinder \$159.50

AnSCO Karomat f/2 and built-in rangefinder \$164.10

Brownie 8mm Kodak movie camera \$ 43.30

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Date purchased.....
(list other equipment separately)

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CLOSE-UPS

• On page 60 of this issue, we introduce a new feature and a new writer to our pages. The writer, himself, needs no introduction to anyone active in the photographic field in and around New York City, for big, genial Vic Scales is probably the most-sought-after judge and speaker by camera clubs in the metropolitan area.

As a result of his activity and willingness to be helpful he has been awarded an honorary membership in the Staten Island Camera Club, the Glen Brook Camera Club, the Dykeman Camera Club, The Color Slide Club of New York and the Southgate (England) Photographic Society. In addition, he can add the initials Hon. PSA after his name.

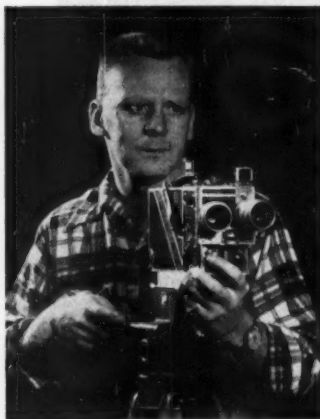
He was a founder-member and a former president of the Rockefeller City Camera Club, is former president of the Metropolitan Camera Club Council, and was vice president for eight years of PSA.

Vic rewrote the constitution and by-laws of both PSA and the Metro CCC during his terms of office and is the author of "Manual of Camera Club Organization and Management" and many articles.

In addition to this busy life, Vic adds modestly that he "also makes pictures."

• Maurice M. Prather, author of this month's movie article, has been in the motion picture field since 1943. He has been consecutively a laboratory technician, light pusher, assistant camera man, film editor, chief engineering photographer.

In addition to motion pictures, Mr. Prather has spent some time in still photography. At present, while studying to be a director, he is engaged in the production of educational films.



Maurice M. Prather

MORE VALUES

Close-Dated Film

AnSCO Color 100' 16mm day/ite/tung list \$10 \$7
Super XX 100' 16mm list \$7.40 \$6
Kodachrome A, 16mm 50' magazine (April 52) \$7.15 \$5.90
50% Off Feb 52 date and close-dated roll film
V620-23c V120-23c V122-23c V616-28c
V616-28c V116-28c

Used Lenses

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7" Goerzt Dagor U3 2.9 compound shutter \$57.50
8 1/4" Ilex Paragon Velostigmat f/4.5 Acme #4 shutter 1 to 1/150 \$111.50
New 90mm wide-angle Weitwinkel Anastigmat f/6.3 compur 1 to 1/400 synch shutter \$39
14 1/2" Hugo Meyer Aristostigmat US 4.8 \$178
127mm Ektar f/4.7 Supemat synch Graphic Lb. \$29.75
5 1/2" Ilex Anastigmat f/4.5 #3 Acme Synchro Shutter 1 to 1/200 \$87.75
5x8 Turner-Reich conv. 8 1/2-14-20" Acme #3 \$89.25
90mm Elmar f/4 latest chrome lite weight \$83.50
127mm Colorstigmat f/5.6 \$13.50
13.5cm Xenar f/3.5 \$31.25
51mm Kodak projection f/4.5 \$20.25
5" Homogentric f/5.6 \$20
100mm Ektar projection f/4.5 \$33.75
5 1/2" Ilex Paragon Anastigmat f/4.5 \$56.25
3 1/4" Bausch and Lomb Tessar f/4.5 \$45
7" Goerzt Dagor US2.9 Ilex shutter \$66.75
6 1/2" Ilex Paragon Anastigmat f/4.5 #3 Acme shutter 1 to 1/200 \$128
8x10 Turner-Reich conv. 12-21-28" Ilex shutter \$108
5 1/2" Ilex Paragon Anastigmat f/4.5 #3 Acme synchro \$88

Used Cameras

9x12 BeeBee, Ysar 13.5cm f/4.5, King Sol battery case and tripper, 9 film holders, packadapter \$35
Zeiss Ikon 2 1/4x2 1/4 Super B, Tessar f/2.8 \$95
Kodak 35 f/3.5 synch shutter \$55.50
Bolsey B 35mm battery case and synch. case \$40
Ciroflex D, Alphax shutter, case \$69.50
Ciroflex D, flash gun, case, shade in case \$77.50
Ciroflex C, Rapax shutter, flash gun, tripper \$59.50
Kodak Medalist 2 1/4x3 1/4, case \$159
Leica G, Summar f/2, case \$125

Other Equipment

Kodak Hobbyst enlarger 2 1/4x3 1/4, lens \$30
Solar 5x7 condenser enlarger, Kodak 5 1/2" f/4.5 lens, Albert 11x14 easel \$85

SPECIAL

4x5 Federal Model 470 double condenser enlargers f/6.3 lens list \$109 good condition \$60

SPECIAL

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(Discontinued Models)

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New Zeiss Ikonta C 2 1/4x3 1/4, f/4.5 Navar (\$69) \$53.30
New Zeiss Super Ikonta C 2 1/4x2 1/4 f/3.5 Tessar (\$198) \$58.45
New Zeiss Ikonta Super B 2 1/4x2 1/4 (\$244) \$195.44

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NATIONAL MEMORIAL PARK CONTEST EXTENDED

The National Memorial Park Amateur Photo Contest, offering \$250 in grand prizes plus \$5 for all pictures published, has been extended until June 30, 1952.

The two classes of photographs eligible for the contest are Landscapes and Statuary and must be taken at the National Memorial Park located on Lee Highway near Falls Church, Va. Contest blanks are obtainable at the Park.

VIENNA PHILHARMONIC FILMED

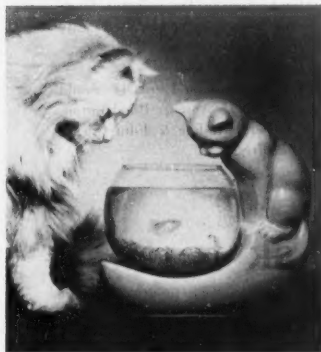
The Vienna Philharmonic Orchestra recently has been recorded in a series of 13 musical 16mm films which include: Beethoven, *Fifth Symphony*; Mozart, *Serenata Nocturna*; Schubert, *Unfinished Symphony*; and Strauss waltz sequences. Choral as well as instrumental musicians have participated in the series.

Further details are available from Sterling films, Inc., 316 West 57th St., New York 19, N.Y.

KODAK SALON GOES ON TOUR

The entire contents of the 17th Kodak International Salon currently is enroute to Kingsport, Tenn., and Toronto, Canada, where it is to be shown at the company's branches. (The show was on exhibit at the Memorial Art Gallery in Rochester during the middle of January.) Selected prints from the Salon will be displayed in Grand Central Station, New York, February 26-March 10.

Winner of the George Eastman Memorial Medal this year was Grant Haist



'Fishful' Thinking by Grant Haist, winner of George Eastman Memorial award.

of Rochester. Mr. Haist's 'Fishful' Thinking was voted the best pictorial print of the Salon.

Open to all Kodak employees throughout the world, the Salon this year received a total of 1582 submissions of which 770 were accepted.

HALF BILLION FLASHBULBS PREDICTED SOLD BY 1955

Flashbulb consumption on the camera market is predicted to reach a high of at least 490 million and possibly 730 million annually by 1955, according to Frank W. Mansfield of Sylvania Electric Products, Inc.

"A camera is now a common household article," Mansfield said and reported that at the end of 1950 "70 percent of all households owned a camera. This contrasts with 75 percent of the households with a bathtub, 63 percent with a telephone, 80 percent with a mechanical refrigerator and 70 percent with automobiles."

Owners of flash photographic equipment increased from slightly over 5,000,000 in 1948 to nearly 11,000,000 in 1950, Mansfield pointed out and indicated that the ratio of flash photographers to total amateurs increased from 13.3 percent to 24.6 percent. "The total number of active flash households increased from 6,300,000 to 8,530,000 showing that the industry needs to do more than sell equipment. It must follow through with an educational program."

COLD WEATHER CAMERA TIPS

Cameras as well as ears and noses react to cold weather and the following precautions should be observed especially if one is doing work out of doors in a chilly environment.

Shutters, for example, tend to slow down because of congealed oil in the shutter mechanism. This condition can be alleviated by cleaning or servicing by a camera dealer. The amateur should not attempt to oil or clean the mechanism himself, however, although he can, by working a slow shutter a few times before making exposures, help out the situation to a degree.

Bellows also are subject to damage because of becoming too cold. If a bellows camera has been left in a cold place for some time it is advisable to open it slowly and with caution so as to avoid cracking which would cause light leaks.

Finally, a camera brought into a warm room from the cold will fog in the same way as do eyeglasses, and if the change is too severe, condensation may possibly form inside the lens which in any case should be carefully examined before taking pictures.

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FOR EXAMPLE:→

Here's an enlargement where Cykora Glossy fits all requirements to a "T"! Those crisp, sparkling highlights, rich middle tones, and shadowy depths of the water *couldn't* record better on any other paper. For strong, cold tones in keeping with this subject, simply develop Cykora in Ansco Vividol, laboratory-packaged for your convenience.



←This subject is made to order for Cykora, too—for the Kashmir White surface. Here, where pleasing warm tones enhance the effect, develop Cykora in Ansco Ardol developer. Warm brown to sepia tones can be obtained easily by treatment with Ansco Direct Sepia Toner.

Yes, 99 out of every 100 pictures you'd enlarge would "look like a million" on Cykora! Ansco, Binghamton, New York, A Division of General Aniline & Film Corporation. "From Research to Reality."

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CYKORA PAPER

PICTORIAL PORTRAITS

Text and Photographs by Hans Kaden, FRPS, FPSA



Portraiture, where pictorialism is most misunderstood, is the foundation of photography. Sooner or later it concerns every photographer whether commercial or amateur. The problem is static: subject matter will never change.



PICTORIAL PORTRAITS

WILL this portrait be accepted in a salon?" That is a question often put to me by aspiring pictorialists and by professionals as well. Sometimes my answer is yes, and sometimes I have to say no.

Portraiture is the foundation of photography. It was the basis for the first steps in this relatively new art a hundred years ago. Many years later this realistic medium found its way into commercial use and either put quite a few commercial painters out of work or forced

them into taking up photography. Today it is unthinkable to separate photography from the many fields of advertising and science.

Every photographer, whether a commercial man, amateur or pictorialist, will on some occasion be confronted with portraiture. In no other branch of photography is the "pictorial" quality so misunderstood as it is here. The problem is that our subject matter will always be a human being whose shape we cannot change. We

will always have a head and a body with two arms, hands and legs. So, our endeavours at pictorial portraiture must take a different direction.

Let's look at the different classifications of portraits. Generally we consider the *identification* portrait first. Here the camera is used only as a precision instrument for recording face features. Since it would be more difficult to identify a person by body structure, the face alone—or head and shoulders—is used for this type of portrait.

The second type of portrait is the so-called *formal* portrait. It forms a considerable part of professional studio work, but differs from the identification portrait. A formal portrait should be flattering and show the best head position with the most suitable lighting. This type of portrait is seen in everyday publications—newspapers, magazines, book jackets—on the newsstands and in hotel lobbies. Leaders in politics, industry and commerce, authors, lecturers, song writers, musicians and people in show business are always in need of it. Limited here in his self-expression the photographer now must follow the need of the customer—whom it is vital to please.

The third class of portraiture is the *informal* portrait. Characteristically, informals include arms and hands, sitting or standing poses, the subject's smoking, smiling

or "doing" something. The better class magazines and yearbooks published by industrial concerns often prefer this type to the formal because of its much more personal quality. The informal is, however, more difficult to take than the formal portrait. Difficulties lie in posing hands, arms, legs, and in catching the expression which must mirror the personality of the sitter. Even full length may be used here. Also, if props are to be used—especially the posing chair—they must be consistent with the subject's personality. A dainty graceful chair would look as strange an accoutrement for a military leader as a heavy desk chair is a grotesque frame for a delicate young woman.

With the *character study* we have the fourth class of portraits. As the word indicates we have to emphasize the character or personality of the sitter. To emphasize character we may even be driven to the extreme. While an informal portrait may be made of *anyone*, a character study is naturally limited to persons whose typical features and expressions are most interesting. This should be a face appealing not only to the subject's family and friends, but also to any casual viewers and which will create an emotional reaction within anyone. A famous English critic said, "A character study is seldom a good portrait and a good portrait is rarely a masterpiece."

Left, at play in natural surroundings, children make excellent pictorial portrait subject matter.

Props, when used, must be chosen with care. Here "Mother Goose" and chair are appropriate.



PICTORIAL PORTRAITS

The character study is often a head portrait only. It may be an informal presentation including arms and legs. But it is seldom a full-length picture.

In looking at these four classifications we must exclude the identification picture (or any for that matter, which looks like one) from the pictorial class. Formal as well as informal portraits and character studies can be highly pictorial in the artistic sense. They can be made anywhere by anyone, professional or amateur, with any camera from a 35mm to the professional 8x10 camera—indoors or outdoors, in the studio or living room.

One thing is imperative for any pictorial presentation: *technical quality must be beyond reproach!* This applies to print quality as well as to corrective control work. Print size also must be considered, the customary 8x10 being the weakest size. Today the trend in the exhibitions and salons is for larger sizes: 14x17, 16x20. There is a good reason for this—the *carrying power*—and the 8x10 will be weak in the company of larger prints. Incidentally, don't believe that making a larger print simply means raising the enlarger. All the faults of composition, lighting and retouching will be further emphasized in the larger size.

Now, then, what would make a formal portrait *pictorial*? Mainly the subject itself. To be more precise, the age and the appeal of the subject. Middle-aged people have the least pictorial appeal. But babies, children, attractive young women and old people are excellent subject matter. Actors, actresses, celebrities, musicians and artists make good subject matter, too, if their face structure and features are *characteristic*, regardless of age. It is the photographer's job to bring out such characteristics by the use of light, pose and expression.

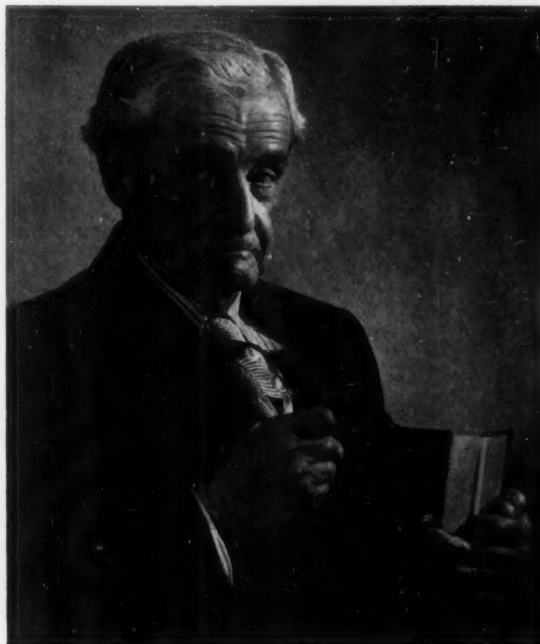
Many formal portraits entered in competitions and salons are often nothing more than a good likeness of "Uncle Jim." No one but family and friends are interested in it. Emotional impact is lacking. It sells nothing.

Drama and beauty are two of the strongest means for general appeal. If you have either one or both in your formal portrait you have a fair chance of recognition in salons.

Informal portraits have a still better chance. Here we may bring out an interesting expression of mood by use of the hands. Just as in the formal class, however, the subject has to have certain appealing qualities—the beauty of youth, the charm of a child, the wisdom of an old gentleman. But don't force your subject into hand poses which are strange to him!

The character study is the most popular and successful type of pictorial portrait. Here, in a broad sense we are portraying a specific character. While old age offers

Old age offers many possibilities for the character study, a popular and successful type of pictorial portrait. Here is "Professor X."



the most possibilities, suitable subjects can be found among the middle-aged, but hardly ever among young people. We speak of *character lines* in the face which often reveal the personality and reflect will power, humor, kindness, sincerity, wisdom and sorrow.

Character lines may typify certain types of working men: farmers, dock workers, truck drivers, fishermen, policemen, mailmen, engineers, scientists and many, many others. We see them—men and women—everywhere, on the main street, in the slums and on buses or subways. And we must photograph them as they are, not dressed up in Sunday best, but as they are seen in soiled or worn working clothes, ragged dresses or in laboratory coats.

Props will often help to tell a story. Take a look at the accompanying character study, *Professor X*. A formal head portrait might have been interesting but not *strong*. The book with the finger between the pages, the eyeglasses in the hand and the particular expression tell a candid story. They tell us that the Professor had just ended a lecture on some serious problem and is observing the reactions of his audience.



Scientists, too, are very good character study subjects, with lab coats and test tubes as props.

He's really a fisherman, and pole, pipe, kerchief and hat are not affectations in this study.

It is a bad error to dress up a subject to impersonate someone else. If you want to make a character study of an old Mexican, don't dress up a camera club member. He will always look like just this unless he's a true representative of the type you want.

For some years past old men with beards were preferred for character studies. Though critics, judges and the public today are somewhat tired of them, still a bearded old man often is a characteristic representative of a certain social class. Nothing wrong with it; but there are many suitable subjects *without* beards. And don't overlook those kindly, white-haired old ladies in their eighties. They make fine models for an appealing study. There is some basic difference between the technical execution of an informal portrait and a character study. The informal portrait must still flatter the sitter. Blemishes and character lines must be softened or completely removed. Conversely, the character study *emphasizes* skin texture and character lines. Lighting should be used to bring out these characteristics (back lighting is excellent for this purpose). Lighting, furthermore, is often used here for dramatic *low key* effects.



**PICTORIAL
PORTRAITS**



The *medium key*, so common to the formal portrait, has at least artistic appeal.

Purposely, I have not mentioned two types of pictorial portraits which are highly artistic and always accepted by juries if they are well done. These are the *high key* and *glamour* portraits, two extremes as far as the lighting effect is concerned, but which have one thing in common: the subject which always must be a young and beautiful woman. The difficulty with both lies in the selection of a suitable model.

High key, not a lighting that customarily flatters the subject, does give a graceful, delicate and youthful effect. Young women with delicate faces, high cheekbones, lustrous wide-set eyes, straight noses and full mouths are ideal models. Although light colored clothing and blonde hair is desirable dark hair can be changed to high key by being covered with draping material. The lighting should be flat and a white or light gray background should be used.

The same type of model must be used for glamour portraits where the lighting is usually dramatic, has high contrast and low key. If clothing lacks glamour, draping may be used to gain this effect. High key and glamour portraits will be more artistic if they are kept impersonal.

A few words about *baby* portraits, another specialized class. An effective baby pictorial is one which does not reveal "person" but which portrays a baby in an impulsive mood. Such a portrait is not always appreciated by parents who usually like to see the little one with a smile. For the pictorialist, as far as the expression is concerned, anything goes. The cuter the better. Emotional appeal is universal.

Care should be taken to avoid disturbing objects or patterns in the background, high key again being the best medium. But wait until your baby is about six months old, when he begins to recognize his surroundings, to laugh, cry and to orient himself in the world.

Now, friend pictorialist, you may have all the things necessary to play your part. You may have all the items for a pictorial presentation: the model, the lighting, the setting and technique. But to make it successful requires a little *more* than that! Use your individuality. Put part of yourself into it. Let your sitter feel that you *know* what you want. Be determined in your directions. Weak model direction will spoil the effect. Try to capture a mood and expression which will create a high emotional response in the viewer. Have something to say—say it well—and you cannot miss!

Mother and daughter, informally posed, have been caught in a spontaneous moment. Note that the skin texture has been softened.



Young graceful women are ideal models for high key, flatly-lighted work. Though blonde hair is desirable dark hair may be draped to achieve the same effect.



High contrast and low key characterize the glamour portrait which, as in the picture at the left, is an impersonal but highly artistic dramatic study.

LET'S PHOTOGRAPH

Text and Pictures by George S. Small



YOUR FAVORITE ROOM

Interiors at home—with or without those who live in them—can be pictures which you will treasure for years. An expert tells you how.

Photofloods provided the all-over light for this picture of a demonstration room set up by "Living for Young Homemakers" magazine. The light from three of them was reflected from the white ceiling and the light from the small lamps provided accents. Notice how the chair in the foreground provides a suggestion of a third wall, a device which will improve any interior shot. Complete details of technique for interior work will be found in this article.

WHETHER WE realize it or not, most of us *do* have a favorite room. Rooms, like people, seem to have personalities all their own. No two are exactly alike, and though it pleases us to think of home in its entirety as a warm and pleasant place, still there will usually be one particular room in the house which seems to us to be more attractive and more congenial than the rest.

You may very well have a favorite room in your home, a room where the family gathers, where you sit comfortably in the evenings with pipe and slippers, where you entertain or perhaps a room you decorated yourself so that it looks exactly the way you feel a room should look. Whatever the reason for your preference, you are missing out on a good thing if you have not tried to capture this subject on film. With a little care, your favorite room will not only provide good memory pictures for the family album but will serve as a subject for some top notch pictorials in the bargain.

For the sake of example let us pick a room in your home, a room of which you are particularly fond. It could be a living room, a den, a bedroom or even a cozy corner somewhere in the house. Let us see if we can get a picture which will capture all the atmosphere and warmth of that room.

EQUIPMENT

Equipment for this assignment need not be complex. A view camera is not essential, and any camera that you happen to own will do the job, although some provision for ground-glass viewing will be a considerable help. Lighting equipment can be kept to a minimum. My own personal lighting set-up for a job of this sort and the one that was used for all the pictures with this article consists of these simple items:

1. four collapsible light stands.
2. four clamp-on light sockets.
3. three 10-inch aluminum reflectors of the screw-on variety.
4. two 150 watt reflector spots (display spots) which can be purchased for a little over \$1 apiece in any hardware store.
5. several No. 2 and No. 1 photoflood bulbs or 3200 kelvin bulbs.

ANGLE

The first step in photographing a room is to choose the camera angle. Since it is impractical to do panoramic

LET'S PHOTOGRAPH YOUR FAVORITE ROOM

At the right are two pictures of the same interior. Both were made with two No. 2 photo-floods directed at the ceiling, but in the one at the far right the diaphragm was opened up to permit an exposure of one second so the model could be included. This has resulted in some loss of depth of field and the foreground table is not as sharp. This table is important to the design of the picture. Cover it with your hand and see how different the picture looks.



Here is a bedroom scene illuminated in the same way by diffused light reflected from the ceiling. Note how the additional illumination from the small lamps adds sparkle to the picture.





views of a room and impossible to get the whole room in one shot, it must be divided into several sections to be photographed individually. In spite of the fact that the general decor may be designed to lead the eye in a complete sweep of the room, each section must be chosen so that it forms a well-balanced and self-contained composition where the eye will have no tendency to wander off the edge of the picture. This can be accomplished with a little careful balancing of weight and line, keeping these points in mind.

1. Except in a few unusual cases, a picture should show no more than two walls of the room. These walls should not be shown in equal portions with the corner in dead center but should be spaced so that one wall takes up the greater portion of the picture with the other wall considerably subordinated. The camera should face well into the predominating wall so that the horizontal lines will be more nearly parallel along this wall than along the other. This will make any unavoidable linear distortion less noticeable.

2. The center of interest in the picture should be some object of substantial weight and tonal value. Nothing looks more lifeless than an interior shot where all the objects sit along the edges of the picture while the center is taken up with a piece of bare or sparsely decorated wall.

3. Weights in opposite corners of the picture should be kept evenly balanced. Do not choose an angle with a heavy

armchair on one side of the picture and a miniature footstool on the other.

4. All chairs should be arranged so that they face into the picture. Chairs facing out will lead the eye right out of the composition and spoil the intimacy of the scene.

5. Room lighting should be balanced the same as weight. Table and floor lamps should be evenly distributed in the picture so that lopsided lighting contrast does not spoil the general unity of the scene.

The use of foreground objects in photographing interiors is a most valuable device and will often turn a mediocre scene into one of dynamic interest. When carefully used, foreground objects can accomplish the following desirable things:

1. give a sensation of depth and third-dimensionality.
2. suggest a third wall of the room. Shooting across the arms of a chair which is known to be against another wall will locate that wall in the picture though the wall itself is not visible.
3. add needed weight balance. Enlarged foreground objects, when strategically placed, can be made to add weight to one side of the picture or the other or to fill in bare spots in the background and thereby achieve a better balance.

Occasionally it will make the scene look more natural if the camera is placed to simulate the eye of the casual observer; low, if one usually surveys the scene while

LET'S PHOTOGRAPH YOUR FAVORITE ROOM



At the left is the living room of a small New York apartment. Small photographed it with a 4x5 Linhoff Technika with a 90mm wide-angle lens. The general light was from two No. 2 photofloods aimed at the ceiling and a 150-watt reflector spot and a No. 1 photoflood were added to simulate light from room lamps outside the picture area.

sitting in a chair or high, if it comes into view while entering the room

ARRANGEMENT

Having chosen a good angle, the next step will be to arrange and rearrange those objects within the field of view with an eye to making a more pleasing composition. In most cases it will be inadvisable to make any drastic changes as this would cause the room to appear strange and unfamiliar. So let us concentrate on the little things which play a surprisingly big part in making the project a success or failure.

The first process is subtractive. Remove from the scene all ash trays, table lighters, cigarette boxes, small potted plants, loose books and magazines, and bric-a-brac of all kinds. Simplify the scene so that nothing is left but the bare essentials.

Now, start replacing these items, but slowly and judiciously with an eye to composition. Fill in the empty spaces, but only enough to keep them from looking bare. Put an ash tray here and a cigarette box there, while maintaining simplicity and balance throughout. Make sure that no object goes into the picture which is not instantaneously identifiable to the casual observer. Nothing spoils a picture quicker than having a lot of what-is-it's stuck in odd corners. With an eye to separation, put light colored ash trays on the dark tables and dark ones on the light tables. An open book or magazine thrown across a wide expanse of chair or couch will add a homey touch and serve to break up what would otherwise be a large empty area.

LIGHTING

Now that the scene looks the way it should, let us see what can be done about lighting it. Here is a point where a lot of people go wrong by that simple but fatal error of overlighting. Remember, this is not a big photo studio, it's a home. You never saw home lit up like a linoleum advertisement and if you insist on photographing it that way your final print is going to have about as much homey warmth and charm as Grand Central Station. The truth about home is that it looks its heartwarming best just the way you see it every evening, with the lamps lit and perhaps a fire burning in the fireplace. In order to really capture the atmosphere and spirit of the room it should be photographed just this way. Auxiliary lighting should be used solely to bring all areas of the room up to a point of illumination within the latitude range of the film without in any way disturbing the general lighting scheme. This can be best achieved by following one basic rule which is: *"There should be no direct light used in the picture except where the source is either visible or identifiable."*

First, remove all bulbs from the room lamps and replace them with 100-watt bulbs. If the lamp shades are of different hues it may be necessary to use 150-watt bulbs in the darker ones so that they balance to some de-

LET'S PHOTOGRAPH YOUR FAVORITE ROOM

gree the brilliance of the lighter lamp shades with the 100-watt bulbs.

Now, set up two light stands with reflectors and No. 2 photofloods or 500-watt bulbs. Place them on either side of the camera and direct them up at the ceiling. Move them back and forth until they cast an even glow over the whole scene. Since ceilings vary in color, height and shape, it will be necessary to judge with the eye whether the reflected illumination is too strong or too weak for the room lamps. The room lamps should throw an illumination on nearby objects of from two to four times the intensity of the fill-in lighting or to such an extent that the areas illuminated by room lamps are clearly defined and separated. Fill-in lighting may be increased by adding another light or decreased by substituting No. 1 photofloods for the No. 2.

Where a floor or table lamp is outside the field of view but casts its light on objects within the field of view, it will be necessary to indicate that light in order to maintain the natural appearance of the room. For this purpose, a 150-watt reflector spot mounted on a stand near the lamp in question will throw a light resembling that of the lamp but of a better quality and having the added advantage of being adjustable.

If the scene includes a fireplace, by all means have a good roaring blaze going inside. There is nothing quite as dismal as an empty fireplace and there is no really effective lighting stunt you can use as a substitute. If a fire is impossible for any reason, a couple of white birch logs on the andirons will serve well to pull the fireplace out of the doldrums.

EXPOSURE

If directions have been followed carefully to this point, exposure should present no problem. Using a meter, expose for those areas illuminated solely by the fill-in light and let the bright areas take care of themselves. This will insure the recording of all detail on the negative. If the lighting balance is right the bright areas will not block up and the lighting contrast will be easily absorbed within the latitude of the film. Since a long time exposure is permissible, the lens should be stopped way down in order to bring all the area covered into focus.

HUMAN INTEREST

Now that we have a picture of your favorite room, let us go one step further and, since home is inseparably connected with family, let us get Mom or Dad, Aunt Mary or Uncle John into the picture to make it complete. Since it is best to maintain the natural approach, the models should be doing only those things which are most natural to them. Aunt Mary should be knitting or reading or sewing and Uncle John would be poking the

fire or smoking his pipe. If Aunt Mary can hold a pose (and most people can when sitting down) there will be no necessity to make any changes in the set-up whatsoever except, perhaps, to arrange for a shorter exposure at a slightly larger aperture.

If, however, the subject or the pose dictates a fast exposure, here is a method which will turn the trick.

First, unplug all the lights including room lamps. Then, replace the bulbs in the table and floor lamps with No. 5 or No. 25 flashbulbs in adaptors. Wrap these bulbs in one or two turns of thin tissue. Then, replace the photoflood lamps with No. 22 or Press 50 flashbulbs. Let the fire die down or bank it so that it smoulders and gives off smoke but no flame. Put an extension with another No. 22 bulb back out of sight in the fireplace as far from the heat as possible. Hitch this whole system up to your flash circuit but be careful to keep the wires out of the picture.

Exposure on this set-up should be about $f/11$ at $1/50$ sec. on Super XX or similar film but can be more accurately determined by measuring the average distance from your fill-in lights to the ceiling to the subject, dividing this into the flash factor for the fill-in bulbs, and increasing the resulting exposure by two stops. (This method was more thoroughly explained in my article on bounce flash in the February *AMPHOTO*.) The negative resulting from this method should be almost identical to that produced with the photofloods.

PROCESSING

Processing of both negatives and prints should be carried out in a normal manner. Shadow areas of prints should be allowed to drop well into the dark side of the grey scale, and light areas should show full detail without washing out. The reflected light fill-in may cause the walls to go a little light near the top, and it is well to darken the top of the picture down just a shade to keep the interest in the center of the room. Also, if the lamp shades are figured ones it will be necessary to burn them in slightly to bring out the design. If the picture shows excessive ceiling area it would be well to crop all or most of it off since any large white expanse at the top of the picture tends to do nothing but draw the eye away from the center of interest.

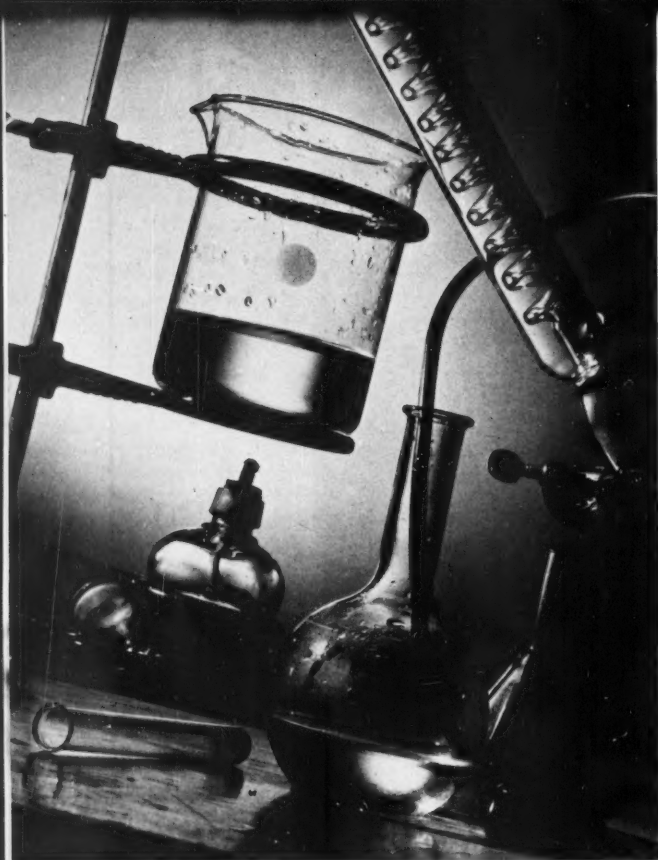
A most important point in processing will be the correction of distortion in the vertical lines of the picture. Any slight tilting of the camera up or down will always result in a toeing-in or toeing-out of all vertical lines. This situation can be easily remedied in printing by tilting the enlarging easel until the vertical lines in the picture become parallel again.

Interior photographs taken and processed in this way should produce fine, brilliant prints which you will be proud to display over the years to come.



When a model is used in an interior shot (below) flashbulbs may be substituted for photo-floods. No. 22 flashbulbs can be substituted for the No. 2 photo-floods and the small lamps in the picture area can be fitted with small flashbulbs in adapters. All the lamps, of course, must be connected with the flashgun at the camera and care should be exercised to be sure that the wires from the small lamps do not show in the picture.



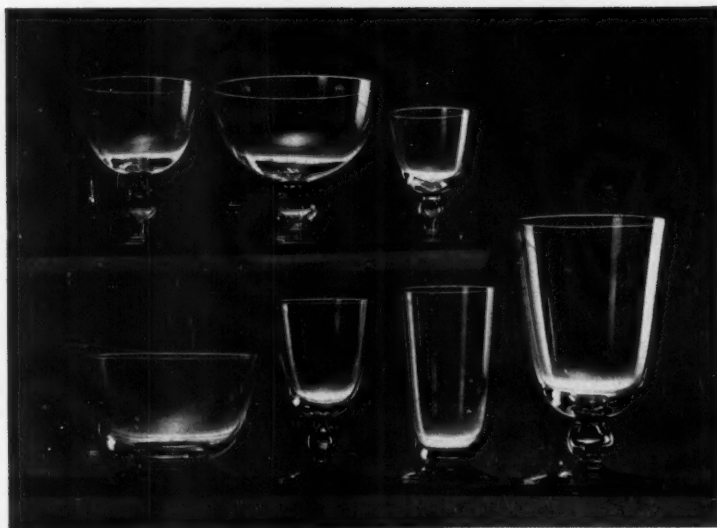


With the light behind the subject new values are brought out and a totally different effect secured in the final print. Try the methods suggested here by the author and bring new sparkle and depth to your pictures. Glass is only one of the subjects which respond to this treatment.

PUT YOUR LIGHT BEHIND T

Text and Photographs by John Reiner

Glass is not difficult to photograph when the light is projected from the back rather than from the front. Here are tumblers which sparkle and really seem like glass because they have been photographed with the light coming through the objects rather than being illuminated from the front. Try this yourself for new and different results.



A Jack-in-the-pulpit looks even more interesting when the light has been placed behind it. Nature subjects, still-lives, even portraits take on new interest when the light is placed behind the subject. For details and suggestions on procedure read the article on these pages.

THE SUBJECT



LET'S TURN OUR LIGHTS AROUND and view some of our old subject material with the light coming *through* it instead of from the front. Many of these subjects will appear more dramatic; the prints will have greater impact. Textures hidden in the subject will be revealed as will design and pattern. I am sure that after you have once tried photographing with transmitted light you will watch for the next opportunity to make use of it.

We are all familiar with the use of transmitted light in photographing stained glass windows in churches. Many interesting salon prints have been made by photographing the curious designs etched by frost on window panes. These, with light shining through them, are perhaps the

most common subjects. Let's look at some of the other less common subjects which will enable you to use your imagination.

In the out of doors one will find many fine subjects which may be photographed with the light passing through them to reveal texture, drama and color. If we desire more controlled lighting than the sun affords the subject may be brought indoors for a closer look.

In the early spring I like to wander in the woods and take shots of the many interesting plants and wild flowers which pop into view after the long winter. The fruit orchard with its apple, peach and cherry blossoms makes wonderful material for fine prints—especially in color—



A light in front, from below, dramatically lights the face of this Indian dancer; but what really picks the shot up and puts it in the out-of-the-ordinary class is the light from behind which transilluminates the head-dress. The principle light behind the subject will transform many shots and make them more interesting.

PUT YOUR LIGHT BEHIND THE SUBJECT

when the sun shines through it.

One day I brought in from the woods Jack-in-the-Pulpits for planting in my rock garden. Before planting them I decided to take some shots of them in color as well as black-and-white. After making several exposures I decided to try a very close shot of the flower without the leaves. In bending back the top of the flower I discovered a very unusual pattern in the vein structure. To bring this out and make the picture was very simple. The flower was placed in the top of a small pop bottle, filled with water to keep it fresh. The camera was tilted to take care of the diagonal composition and then one spot light was placed above and behind the flower just out of view of the lens. To get more control I placed a spot attach-

ment which concentrated the light on the flower and at the same time shielded the light from the lens. For correct exposure I took a meter reading close to the flower with the light passing through.

As an experimental shooting session try your hand at photographing glass objects with transmitted light. All the equipment necessary is a spot light, a sheet of white paper, a sheet of glass, your meter and camera. There are two ways to set up the lighting for these pictures. First the glass object may be set on the near edge of a board placed about three feet from the white background. Then the spot light is concentrated on the background just in back of the glass object. The result is a black line outline of the object in the groundglass of your camera.

To judge your exposure take a meter reading from the front of the glass object with the light coming through. These negatives will have more snap if slightly over-developed.

If you desire to have reflections of the glass object show, and to lose the support on which the object is rest-

dances. Indian costumes have always fascinated me and I could just picture the tribe's great chief sitting before the camp fire with its dramatic low light shining up into his face and the light of other fires shining through the feathers of his war bonnet. To get this feeling into the picture I posed the dancer in a sitting position. Then, to



This garment would be interesting in any light, but the author has added impact by placing the main light behind the subject. The texture of the cloth and the silhouette of the legs are brought out by this technique which is described by the author.

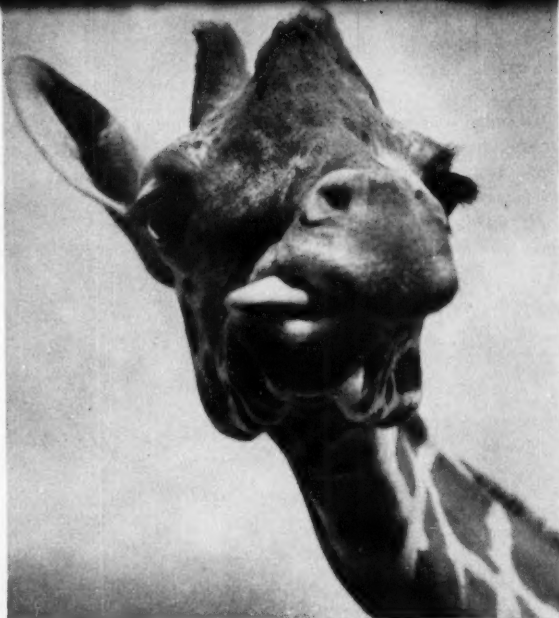
ing, the set up is slightly different. In this case the sheet of glass is placed about two feet off the ground by placing two chairs so they just support the glass sheet. Place a large sheet of white paper under this and the glass object to be photographed on the glass sheet. The spot, focused on the white paper, is located in back of the set. This set up is excellent, incidentally, for photographing cut glass and glass having etched designs.

We can also make our portraits more meaningful and dramatic by combining front lighting with transmitted light in the presentation of the portrait. I had the pleasure recently of photographing two very famous dancers, "The Laubins," who are internationally known for their interpretations and presentation of American Indian

light the portrait I used a 500-watt spot directly behind the war bonnet so its full beam was concentrated on the back of the head. This produced a beautiful play of light through the bonnet feathers. Then another spot was placed on the floor with a small tubular snoot to control lighting so it just picked up the face. The exposure was made for the front lighting.

The fashion photographer also makes good use of transmitted light in the presentation of transparent garments and materials. In following this lead in pictorial work the amateur will find that a variety of sheer garments and yard materials may be brought into play when working with portraits, still life and the nude to secure interesting dramatic and light effects.

When this curious giraffe thrust his head over the fence at Chicago's Brookfield Zoo to get a better look, Mr. Roberts happened to have his camera ready to get the shot. "I didn't wonder at his surprise," says the photographer, "as I was carrying a huge old 5x7 Graflex, a veritable museum piece." The shot was made with an f/6.3 B and L Tessar lens, 1/60 at f/16, Ortho X film, in slightly overcast sun.



SHOOTING WILDLIFE PORTRAITS

Photographs by John G. Roberts



A neighbor lad's tame crow did not seem to mind posing and obliged by cawing frequently. Kodak Reflex with two 2-plus proxar lenses, 1/100 at f/8, Plus X film, bright sun. When shooting very black objects considerable over-exposure is necessary to bring out detail in black area.

A far cry from two-legged studio models, the camera focuses on four-legged and two-winged subjects out of doors. John Roberts, veteran of this phase of photography, presents here some of his remarkable head-hunting trophies.

NUMEROUS articles and books have been written on the subject of portrait photography, but each author contends that the one and only subject for portrait posing is the human being himself. Nothing could be further from the truth.

For years John G. Roberts, member of the Outdoor Photographers League, has been shooting head close-ups of wild game found in his native Wisconsin. He has discovered that his animal subjects are far more cooperative

and far less temperamental than their human counterparts. Some of his head studies of animals depict even greater intelligence, he believes, while others show typical human traits. There are the sober fellows, the lens starers, the grouchy ones. A few are so ugly they provoke a laugh, and even the most complimentary lighting wouldn't improve their looks. But they are all good camera subjects.

Although some of his close-ups have resulted from



Though not tame, this chipmunk was subdued "after the harrowing experience of being captured and imprisoned in the pocket of the small boy from whom I purchased him." He used a 5x7 Graflex, eight-inch B and L Tessar lens, 1/60 at f/8, Orho X film.

SHOOTING WILDLIFE PORTRAITS



"This half-tame raccoon was photographed in a large portrait cage furnished with a section of tree for him to climb and a background of foliage. Small pieces of meat placed in a crotch of the tree kept his interest up and induced him to climb again and again." Taken in bright sunlight with a 4x5 Graflex, eight and one-half-inch Wollensak lens, 1/100 at f/11, Super XX film pack.



Nature photographer John G. Roberts poses his subject for the camera, a Speed Graphic with six-inch Kodak Ektar lens, $f/4.5$. Water had to be splashed on the frog to obtain a shiny skin texture. Mr. Roberts has taken many animal pictures. His specialties are deer, fish and wildlife in Wisconsin and Michigan.

Tired from trying to escape, this frog was placed in the sun with earthen bowl of water and branch for natural setting. It is possible to use a rather slow exposure with a frog as he is still before he jumps. A Pacemaker Graphic 4x5 with six-inch Ektar lens was used, $1/10$ at $f/32$, Super Panchro Press type B film, in bright sunlight with white cardboard reflector for fill-in.



camera sets where the animal brushes against a taut thread and clicks its own picture, most of them were taken with the handheld camera or by remote control. Typical of other city photographers, Roberts does not always have the time to sit out in a blind for endless hours waiting for his subjects to call upon him. Consequently he shoots most of his wildlife close-ups without ever stepping into the wilds. Most of his close-up shots are of half-tame animals which hang around the state game farms or drop in to visit resort guests.

When such game is encountered openly no telephoto is

used. The quarry is approached patiently and with perfect animal understanding. Once the subject discovers that the man with the funny glass-eyed little box means no harm, he'll pose without further coaxing.

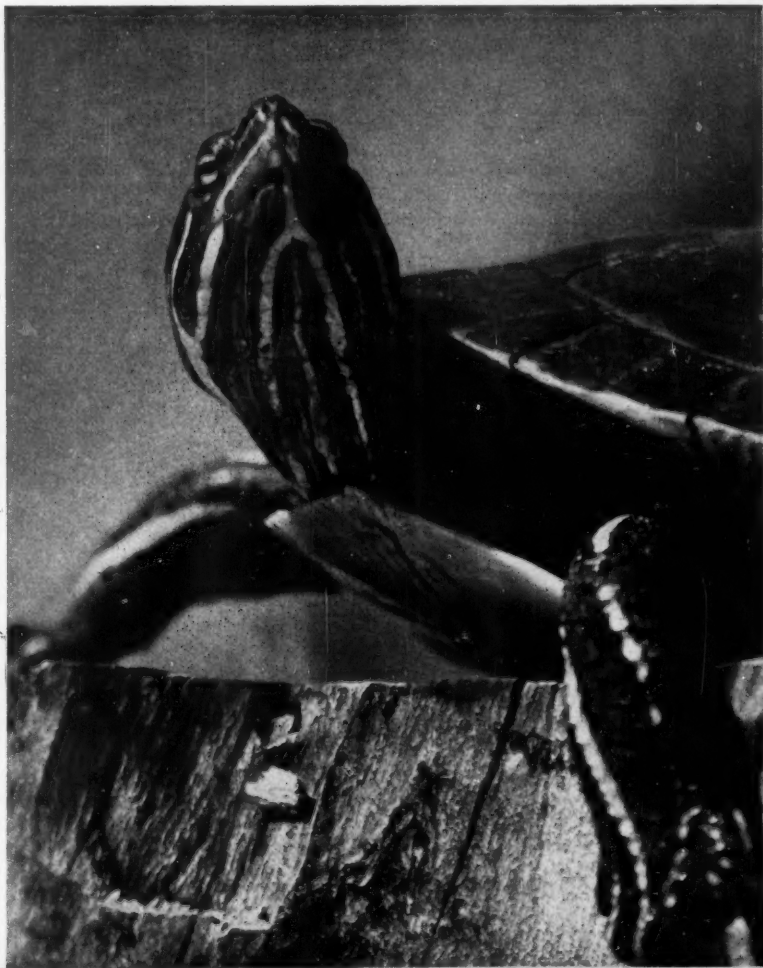
Nothing is more disturbing when filming inmates of game farms than shooting through wire or trying to avoid the man-made huts and feeding troughs in the background. To overcome this Roberts watches his backgrounds, camouflaging cage interiors with small trees and foliage to simulate a natural outdoor setting when making his close-ups.

SHOOTING WILDLIFE PORTRAITS



Grazed by a car, this woodchuck was groggy enough to let Roberts take his picture with a 5x7 Graflex with eight-and-one-half-inch B and L Tessar lens, 1/60 at f/16, Ortho film, bright sunlight. "Although I felt mean about capitalizing on his misfortune, I needed a photograph of a woodchuck, and he seemed none the worse for posing."

"The phlegmatic turtle, easily found, captured and tamed is an excellent subject for the beginner in wildlife photography," states photographer Roberts. Here the camera used was a Kodak Reflex with a pair of 2-plus proxar lenses, 1/25 at f/22 on Plus X film, bright sunlight and white cardboard reflector for fill-in.



CHECK LIST FOR MOVIE MAKERS

The "rules" for shooting movies are simple. Here are the most obvious ones. How does your practice compare with the ideal? Does your footage show that you are forgetting some of these sound practices? — Ed.

THE ROUTINE of movie making never needs to be dull. The techniques reviewed here will not only save your time and money, they will help improve your films.

Shooting without a Tripod. This is the major violation among amateurs. The fact of the matter is that when you bought your camera the salesman probably told you that it was a "hand camera." Although it may be small in size and light in weight it is *not* a hand camera. No movie camera is. No movie camera ever should be hand held except in rare cases or emergencies.

You may consider yourself to be very steady, but regardless of how steady your hand may be it is impossible to hold the camera absolutely still. Although movement of the hand may be very slight, it still is movement. Did you ever stop to consider the fact that a movement of 1/64 of an inch will look as though it were a movement of several inches when projected on the screen?

When using a telephoto lens it is absolutely necessary

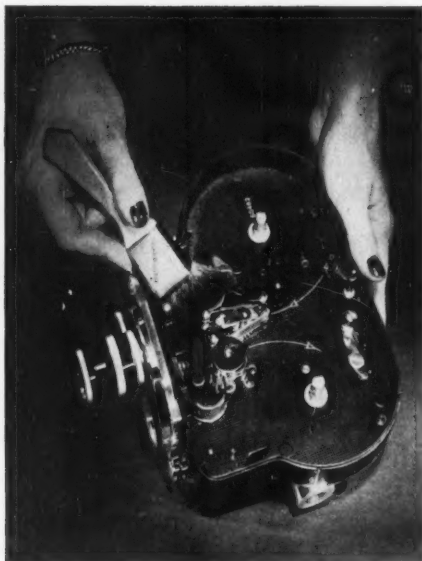
to use a tripod. Not only is the subject magnified with a telephoto lens but also, any camera movement is magnified proportionally. Nothing is worse to watch than such camera movement on the screen. It gives an audience the feeling that the filming was done during an earthquake.

Hand in hand with the use of no tripod is the matter of "panning." Panning may be defined as the turning or moving of the camera to follow action or to cover a large quantity of space. Correctly used, panning may be very effective. It should never be used, however, without a definite purpose (such as to create a cinematic effect). The panning technique also may be used to give the effect of space or vastness or to follow such fast moving subjects as tennis players and racing cars.

Panning, if possible, should be avoided. It is far better to have several short scenes than one long continuous pan. If you must do it, make sure that your tripod head is loose enough to give a good smooth pan. When pan-

Do you use a tripod? This is a movie **must**, for no matter how steady you are, the most imperceptible motion will be considerably enlarged on the screen when you hand-hold your camera. Keeping your film free from dust and scratches is an extremely important part of good movie technique. Films should be carefully inspected and dust gently wiped off with a soft cloth.





It is impossible to underestimate the importance of keeping movie equipment completely clean. A soft camel's hair brush is an excellent device for dusting projector or camera.

ning, always go slowly; when you think you have slowed down enough, cut your speed in half. By then it will probably be nearer the proper speed.

One of my friends who is a student at a Midwestern university bought an 8mm movie camera to record his college life. When he received his first roll from the processing lab he came rushing over to show me the product of his labors. His first scene was an attempt to photograph the entire campus in one continuous 360° pan. This completely ruined my breakfast, but the worst was yet to come.

Naturally he wanted to show his folks the place where he lived. No long shot followed by some closer shots for him—no sir. Instead, he stood in the front yard, started shooting at one corner of the house, then moved straight across the front. When he reached the other corner he

started up the side. Then, arriving at the top, he panned across it and back down the other side. I took my friend aside and carefully explained to him the facts of life. Now I enjoy seeing his later work.

Improper panning and failure to use a tripod are easily corrected faults. Correct use of these two devices will greatly improve your filming.

Bad Exposure. There is absolutely no reason for bad exposures today. There are numerous good, reasonably priced exposure meters and guides on the market. Film ruined through poor exposure can more than equal the cost of a good meter in a year's time. Many amateurs who own these very devices that were created to help them obtain good exposures fail to learn to use them properly. Thus they benefit as little from them as the amateurs who do not own meters.

All too many amateurs take only one reading when they make an initial setup. Regardless of the number of scenes or length of time they spend shooting at the same location, they never take further readings. Many, too, fail to realize that the light from the sun changes every minute of the day. If you have ever watched a professional cinematographer work you will have noticed that he takes a reading before every shot he makes. If amateurs, too, learn to take a reading before each scene they shoot they will probably notice an improvement in exposures.

A common mistake made by the beginner in reading his meter is reading too much sky or too much foreground area. If the exposure of the scene is to be balanced, the reading also must be balanced. If your meter's eye sees too much sky or ground, it will give a reading which is not balanced, being either too light in the highlights or too dark in the shadow areas. If it is essential to shoot a scene with considerable contrast, readings should be taken in the light and dark areas as well as in the middle tone area. These readings should then be averaged out to obtain the best overall exposures. At times it may be necessary or desirable to expose for either highlights or shadows. If your main action takes place in the shadow area it is important to expose for the *action*, and to take the reading from an angle that will include as little highlight as possible.

Extreme care must be used in exposing color film because of the small latitude range inherent in them. It is also advisable to avoid shooting people in the open sun between eleven and two o'clock. Shooting people at this time of day causes deep and harsh shadows on the face, especially around the eyes. When you find it is imperative to shoot people during these hours a reflector always should be used to fill in the shadow areas.



Editing films is not only fun, it is a requisite if movie-making is to be taken seriously. Just as much care should be taken in cleaning editing equipment as camera and projector.

A large piece of white cardboard held by an assistant will make an excellent reflector.

Learning to read the meter is simple and easy. Anyone can learn if he will take the time to carefully study the instruction book supplied with it. The time spent in learning to read the meter will be well repaid in film to save the pitfall of poor exposure. Even if you cannot afford a meter, the guide that comes with the film will do wonders to help you obtain good exposures. When you use a meter correctly you will never be accused of bad exposures; you will enjoy your filming more.

Lack of Cleanliness. Many amateurs ruin otherwise good footage by neglecting cleanliness. Cleanliness in this case applies not only to the camera and lens, but also to projection and editing equipment.

Cleanliness of the camera is of utmost importance. Dirt can and does damage many feet of valuable film. A particle of dust lodged in the gate of your movie camera can easily scratch an entire roll of film. Once the film is scratched it is impossible to do anything about it. It is much cheaper to clean the film chamber before loading the camera than to replace the carelessly scratched film.

If you have watched a professional at work you will have noticed that he carefully cleaned the film chamber of his camera before putting in each roll of film. If you looked closely you noted that he used a small camel's hair brush to clean the film chamber. You may also have noted that he thoroughly inspected the chamber to make certain that no film chips were lodged there. These chips easily can become lodged in a place where they can scratch film.

When the camera was loaded and ready to shoot the professional inspected and when necessary, cleaned his camera lens. Lens cleaning should be done only with lens brushes or lens tissue.

As a general policy it is a good idea to keep all equipment dust-free. Not only does this enhance the equipment's appearance, it is also excellent insurance against the possibility of dust becoming a major problem. The same rules that apply to camera cleanliness apply to projection and editing equipment.

You would be amazed at the lengths to which professional film studios go to be sure that their projection equipment is dust-free. In the 16mm industry the original photography must not under any circumstances become scratched. The company for which I work projects its originals only once. At this time the scenes to be used are noted and are later workprinted (a cheap black-and-white print). The workprint, next cut to the master script, is edited as the finished picture will be. The original is then cut to match the workprint and printed. It is never projected again but is used only to make additional prints.

Amateurs cannot possibly go to the expense involved in this process. However, the amateur can—and should—exercise care in projecting his film. When you are ready to project your film the gate of your projector should be cleaned with a soft brush or dust-free cloth and, if possible, it should be set so that it is fairly loose. This will help cut down on scratches caused by excessive gate pressure.

If you would have scratch-free films always remember to clean your equipment before using it, regardless of whether it is your camera, projector or editing equipment.

Sloppy Technique. Many amateurs who are meticulous on other scores neglect to develop a good technique in the filming of their movies. Many use tripods, make excellent exposures and have clean equipment, yet fail to get professional quality in their work. Where these filmmakers usually fall short of their goals is in the method they use in their filming. Let's look at a few points involved in technique.

Correct use of the viewfinder and the overcoming of the problem of parallax are two points of technique that bother many amateurs. Modern viewfinders are generally accurate in the amount of area they cover. But, as the camera moves closer to the subject the problem of parallax increases. Two lenses cannot be at the same place at the same time. Even though these two lenses are located close together they still do not see the same things. You must learn to correct for this difference or else you will come up with pictures that have the tops of people's heads cut off or subjects about to fall out of the side of the frame. The amount of correction necessary to overcome the parallax will, of course, depend upon the type of camera you own. If you are in doubt, why not shoot several short tests to determine the correction needed?

You would be surprised at the number of amateurs who start filming a scene when their cameras are not fully wound. Results of this type of sloppy technique are generally wasted film, plus the possibility of missing a shot that is either difficult or impossible to re-shoot.

This may seem like a small point, but it is a mighty important one. It is also a problem that is very simple to correct. You should set yourself a pattern of procedure so that you cannot fail to wind your motor before shooting each scene.

Another often carelessly handled mechanism is the shutter speed dial. Silent film sounding, as most of you know, is 16 frames per second; sound, 24 frames per second. If you do your filming at one speed and project at another you will find that your characters have a rather odd-appearing motion. Too fast a shutter speed will produce a slow motion effect. Of course, if you are trying for slow motion that is well and good. If you are not, your films will look terrible. Using too slow a film speed results in speeded-up action—good for special effects, but just a waste of time for the average shot.

Some amateurs fail to make the proper aperture compensations when they change the film speed dial. Doing this will result in under- or over-exposed films. Remember, when you increase the shutter speed you must also open up the aperture to compensate for the difference

in speed. Likewise, if a slow speed is used, the aperture must be closed down.

Focusing is a major problem to some filmmakers. There is no reason why it should be. Modern lenses, especially in the sub-standard movie sizes, have great depth of field. Nearly every lens currently on the market, which has a focusing mount also has a built-in depth of field scale. These scales are very helpful as they allow the amateur to figure out the point of focus that will give him the required depth. There are times when you want all the depth you can possibly get and again, there are times when you want a very shallow depth of field. Your depth of field guide will help you do these things if you will learn to use it.

Another point to remember is that as you move closer to a subject the depth of field lessens. When shooting a person 20 feet away focus does not have to be extremely accurate. When you are filming a close-up of a flower from a distance of one foot, however, your depth of field is extremely short and therefore focusing must be of a critical nature.

Your technique is the one thing that will set you apart from other filmmakers. If your technique is good you will be admired and sought after by other photographers. If you are sloppy in technique, you will find that not even rank beginners will ask you for help. You will probably get tired of the whole thing and drop out of the hobby.

Always remember that today's good filmmakers once were beginners themselves. With effort, you can develop a technique of your own that will win you a place in the hearts of your fellow filmmakers. If you try to do this you will never be criticized for having sloppy technique.

Failure To Edit and Title Films. All too many amateurs are satisfied with a half finished job. And half finished is exactly what you have when you shoot films and then fail to go the rest of the way and edit and title them. There is nothing worse than sitting through a batch of short unrelated reels of film.

Editing is a simple job. It is also fun. It is an ideal way to follow your hobby on winter days and evenings when it is impossible to get out to do any shooting. Editing equipment is simple and inexpensive. You need only a splicer, a pair of scissors, an emery board, a set of rewinds, some film cement, a batch of unedited films and patience.

Even if you only cut the short rolls into long ones you have performed an elementary editing job. If you sit down for a few minutes and think about it you probably may devise several little stories which could be made



Often confusing and difficult for the beginner, the parallax problem (which can result in lopped-off heads as is indicated here) becomes solved when the movie-maker learns to use his viewfinder correctly.

out of the films. You could put all of your vacation films on one reel, and all your home scenes on another, for example.

Editing is easy. The hardest thing about the entire job is getting started. Editing will improve your film considerably and if you do a good job, people will be happy when you invite them over to see your production. Remember, in editing, as stated previously, the rules of cleanliness are extremely important.

Making titles for home movies is a project that bothers many filmers. Title making is a part of movie making in which one's mind really can run wild and if you are an imaginative type, title making should be easy.

There are many ways to make titles. One simple method is to use a typewriter and type whatever you want to say on a light gray card. If you are ambitious you can hand-letter your title. This method is not so difficult as might be expected. There are several good lettering guide books available and these make hand-lettering quite simple. If you want to add zest to a title try lettering with show card paint on glass or celluloid. After the lettering is completed, the glass may be placed over a picture or drawing that you would like to appear as the background for the lettering.

If a live action background is desired you can photograph the action background then wind the film back and shoot the title on top of the already exposed background. This type of title must be done with white letters on a perfectly black background. If you do not care to go to all the effort of some of the methods above, you can always purchase one of the several very good titling outfits on the market.

Regardless of what method is used, title your films! Titling is the extra little touch that will make your film stand out from those of other amateurs, for titles are the mark of the photographer. If film titles are poorly made and photographed in such a manner that they are crooked or run up or down hill, you can be sure the filmer's actual photography will be equally poor. If his films are not titled, you may be sure he is not truly interested in the art of cinematography. If you are to fully enjoy your hobby, always title your films and know that feeling of satisfaction from having done a job well.

Following the ideas outlined above will help prevent you from being charged with any of the faults listed. Once you know you are making some of the mistakes discussed, errors easily can be corrected. Not only will you be happier with the results, but you will save yourself considerable money with which you will be able to purchase new or better equipment.



PICTORIALISM TODAY

Number Two

In the effort to present a comprehensive picture of photography today in our pages, the editors requested a number of those in the top group of pictorialists to allow us to reproduce either their most successful salon print or their favorite one and to answer several questions for the benefit of our readers.

IN SEEKING additional information to pass along to its readers, AMPHOTO asked these prominent exhibitors four questions: What are your working methods? What is your favorite subject matter? Who has been the greatest influence in your work? Is pictorialism changing?

The first of these pictorialists is Doris Martha Weber, APSA, of Cleveland, whose *The Wind Blows East* is reproduced on the facing page. Miss Weber says, "I work rather simply, depending on dodging more than anything else to get the effects I want. Only rarely do I work on a negative and then use only a bit of new coccine to remove some obtrusive detail. I own a reflex as well as a press-type camera but use the latter almost exclusively for my industrials because it gives me more leeway in planning my compositions.

"While I enjoy taking pictures of people, animals and flowers, I get my greatest pleasure out of industrials. Many persons have told me they see nothing but dirt, ugliness and confusion in the steel mills. It gives me a sense of accomplishment to portray them in such a way these characteristics are minimized so one sees instead their majestic power and can visualize their importance in the safety and progress of our nation."

As far as influences on her work are concerned, Miss Weber tells us, "Early in my photographic career I was privileged to meet and work with John Hogan, then chairman of the Pictorial Division of PSA. His counsel and encouragement have played a big part in my choice of industrials as a major endeavor as well as my entrance into salons in a serious way."

She concludes, "I think salons are changing for the better. There seems to be new recognition for pictures showing originality in subject matter, while there is no lessening of insistence on good print quality. Prints submitted to the salons have definitely improved in quality during the past year."

H. W. Wagner of Worcester, Mass., the maker of *Silvery Sheen*, also notes that his working methods are simple. "Direct prints are made on warm-toned papers with dodging and some retouching where they seem to be needed. Sometimes when much print retouching is required, a copy negative is made of the print from which final prints are made. During recent years, I have practiced blue-



Silvery Sheen

by H. W. Wagner. This has received special awards at Johannesburg, Bangalore and Hong Kong and has been well received in U.S. salons in the East. In the West, however, judges have not been enthusiastic.

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toning of winter subjects and varnishing prints."

Mr. Wagner names his favorite subject-matter as Cape Cod and winter scenes and says his still-life work is still experimental. He gives credit to the late Prof. Lee Russell as being the most influential in influencing his work.

It is also interesting to have him report as do other salon workers the somewhat mixed reception of this print which we reproduce. Judges in the western U.S. have accepted this only 20 percent of the time, while elsewhere in this country and abroad acceptances have been 75 percent for a total of 28 hangings.

He believes that salons are only slowly changing. "I believe that the things which should be and will continue to be hung are those of established pictorial value, things which interest and please the

Off the Shoulder

by Theodore Bronson. This has had about 60 acceptances during the past two years and was made with a view camera using 5x7 Tri-X developed in DK 60A. The final print is on Opal G developed in Dektol and slightly selenium toned. The maker has had a highly successful salon record with his favorite subject-matter, girls. This not easy, since many judges frown on the "portrait" class of work.



This Is Nelson

by Lowell Miller. The maker says, "I like the print because it represents a characteristic mood of a friend. . . . the artist focuses his thoughts inward, while the hand is here at rest." This was made with natural light with a No. 2 Photoflood as shadow-fill. Super Panchro Press film was exposed at 1/10 at f/16, developed about 12 min. in D76. Print on Opal K, selenium toned.



layman whose taste has not become jaded by too much contact with pictures."

Lowell Miller of Rochester, N.Y. contributes the portrait of an artist friend. He, too, prefers a straightforward technique, using 4x5 film and checking the time-temperature development with inspection under a Series 3 safelight. In printing, he uses "all the dodging-flashing techniques, local reduction of both negative and print or over-all reduction where necessary. At times, I resort to the negative, positive copy, negative process using local reduction or dye to manipulate and control tonal areas."

As his favorite subject, Miller names, "Anything which can be taken in my basement studio." The greatest influence on his work he believes is the stimulation of fellow exhibitors and camera club

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members and adds that his early training was under C. B. Neblette of the Rochester Institute of Technology.

On salons, "Certainly, pictorialism is always changing. It has absorbed the better elements of every new movement since the advent of the camera obscura. A glance through a collection of published photographs for the past 20 or 30 years will prove that the treatment of old subject matter is constantly finding new expression through pictorialism. As better pictorialist prints are produced each year, they find their way into the salons and exhibitions."

Theodore L. Bronson of New York contributes his *Off the Shoulder* which has had about 60 acceptances over the past two years. He says, "My working methods are rather simple. I happen to like to take pictures of girls and practically all of my exhibition pictures are in this class. I use an 8x10 view camera with a 5x7 back for most of my pictures. I use a 14-inch Ektar or a 12-inch Dagor with this. The film is Tri-X developed in 60A. My prints are generally made



Atitlan Boatman

by Eugenia Buxton, APSA, ARPS. This is an example of the work which has placed Miss Buxton among the top-ranking pictorialists in the world. Her subject-matter is varied, including landscape, persons and human interest material.

Bell Boy

by Frank J. Heller. This is the first print of Heller's ever to be accepted in the salons—the forerunner of well over 800 in the last four years, a record which has placed his name at the top of the list of most prolific exhibitors.



Wintery Night

by Jack Wright. Nine juries have rejected this, but 51 others have chosen it to hang in as many salons. Made during a pouring rain, the 4x5 Speed Graphic was kept covered by a towel. Exposure was 30 sec. at f/11.





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on Opal G developed in either Selectol or Dektol. In printing I do quite a bit of dodging and the prints are toned in a very weak solution of selenium.

"I studied under the late Joe Lootens for about three years and feel that he is mainly responsible for my interest in photography.

"I do not see much change in pictorialism in the salons and hope that there will not be."

Frank Heller of Oklahoma, top on this year's list of most prolific exhibitors, sends *Bell Boy* which was the first of his list of over 800 acceptances.

Heller comments, "I would not hesitate to state that pictorialism is changing and advancing. New approaches and methods of expression are being readily accepted *if* they are well done, in good taste and not incongruous. The salons are ready for the new ideas, but the prints containing these ideas must be well composed, be of excellent print quality and convey the maker's intentions."

He adds a statement which will be echoed by many others of this group, "Pictorial photography has increased my interest in, and sharpened my outlook on, life by furnishing an esthetic outlet to a technical career. It has furnished fun and relaxation as a hobby should. In addition, it is responsible for many close friendships that I have made from Coast to Coast that would not otherwise have been possible."

Jack Wright of San Jose, Calif., is another well-known worker who stands very high on the list of salon workers. He believes that landscapes, particularly if they are in some manner out of the ordinary, are the most satisfying subject matter, with puppies as a second choice and one with more interest and appeal.

His *Wintry Night* is an example of unusual handling creating a picture from subject-matter which many might overlook.

"The teacher who did most for me," he explains, "was Nicholas Ház whose course in "Image Management" I took three times with increasing pleasure and profit."

In his opinion, "Undoubtedly pictorialism is changing. I think for the better. It is inevitable that the vast and revolutionary movements which have caused such controversy in painting and music should carry over to some extent into photography. Most of our exhibition pictures should continue to be quiet, pleasing and compositionally attractive, but the man or woman who wants to try to achieve photographic beauty through unconventional means should certainly be encouraged to do so."



POP SEZ...

Franklin I. Jordan, FPSA, FRPS

I SUPPOSE if I get going on the subject of economy perhaps some of our younger readers will not have much of an idea of what we are talking about. But I can assure them that economy used to be considered even more of a cardinal virtue than now and that many generations of people both before and after Poor Richard have held it in great esteem.

But although this creature, Economy, is shunned by some today, we know that like rum-running in prohibition days there is quite a lot of it going on surreptitiously.

What brought this up in my mind where it has been quietly and harmlessly dormant for many years was a photographic trip that I made with a fellow a while ago. When we had bagged all the good shots (and I at least was ready to go home, get out of my boots, get something to eat and see if I wasn't chilled enough to deserve a stimulant), this fellow said to wait a minute because he had a couple more shots left on the end of his film and he might as well use them up so he could develop the roll. This he did, while I sat on the soft side of a rock and idly noted that there were going to be about a dozen blank spaces on my 35mm roll when I developed it. It does beat all, how some people will fill up the end of a roll with shots they know are worthless when they take them. Although they surely will discard them when they see them, they will still think that they are saving something.

The Extremes Some People Go To:

Long ago I settled in my own mind that it was no more wasteful to throw away a few unexposed films than it was to deface them with worthless exposures and then throw them away. Ever since I have been able to save myself a few lost motions. The way my mind is hooked up I consider that a real economy. If you lose some of your possessions you can get more without much trouble. But no one has yet been able to discover any way of recouping lost time.

It is really laughable to see the ridicu-

lous extremes to which some people go to save a few nickels, and all the more so when you realize that your own pet economies label you just as peculiar as your neighbor looks to you. The man who thinks nothing of tossing out a dollar for the cutie hat-check girl to pass on to the concessionaire will horribly punish his face three mornings in a row to make a razor blade last a little longer.

It makes me think of the old fellow who was discovered one morning poking a five-dollar bill down a crack in a plank sidewalk. When someone reproached him for such wanton waste he explained that he had accidentally dropped a dime down that hole. It wasn't worth the trouble of taking up the planks to get the dime, but it would be to get the five dollars and then he would recover both.

Complaints from the Gadget-Happy

In the early days of the 35mm craze the new rich would think nothing of whacking up \$300 or \$400 for a camera to start their photographic career and would often spoil \$1000 by the time they had fallen for all the gadgets that go with it.

But before long you could hear them crabbing that the disadvantage of this type of camera was that you had to make so many exposures before you could develop a film and see what you were getting. At that time most of the devotees loaded their cameras from bulk film that cost about a cent a shot, and to save a dime they would keep themselves on the anxious seat and for days on end deny themselves the pleasure of seeing what they were shooting. Or else they would fall into the pernicious habit mentioned above by loading themselves down with a high percentage of worthless shots to get the ones they wanted.

Stamp Size Test-strips

There are a lot of other ways in which we photographers habitually are penny wise and pound foolish. That this expres-

sion has passed into an adverb proves how firmly established and well recognized this foible is with us. A very common false economy is to try to save a few square inches of paper when making test strips for enlargements. Some people go to the opposite extreme and use a whole sheet of paper for each test exposure. If expense is no deterrent this is probably the most efficient way of doing it. But most of us cannot operate that way—either because we can not really afford to, or because our fortune has been amassed by practicing small economies. The habit has such a firm grip on us that we cannot shake it even when we no longer have any use for it. For whatever reason, we send a boy to do a man's errand, and make our tests on scraps of paper the size of postage stamps which give us a lot less for our money than a larger size would do.

No Need to Hoard Hypo

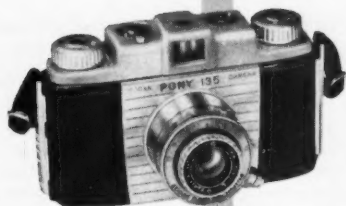
Another common weakness of photographers is overworking fixing baths. A great many years ago I busted into print and told the fraternity that hypo was the cheapest chemical we used and that it was the poorest economy to overwork it. I don't know how many people have written me thanking me for this advice, saying it was the most valuable ever given them. Shucks. They don't need to thank me. Getting into print did me more good than it did anyone else. Many a time when I have been tempted to shirk mixing a new batch of hypo late at night and tried to make myself think the old bath might do a few more prints, I have resolutely turned it down the sink because I remembered that I was on record in the matter and did not want the followers of my precepts to have an advantage over my practice.

Well, I see by the papers that there is a shortage of pennies and that laws are being advocated against the manufacture of piggy banks to alleviate the situation. When I remember the legislation about dollars I shiver to think what is going to happen now that it's a matter of pennies.

Spring's *bursting out all over*

It's Spring again... and here are Kodak cameras ready to help you make the most of every photographic moment ... in both color and black-and-white. Get the camera that suits you best ... and come on out!

The
Kodak
BULLETIN



One of the handiest cameras to use outside—or anywhere—is a *Kodak Pony Camera* ... the 135 or 828. The Pony will help you capture Spring's infinite color in beautiful transparencies perfect for giant projections or color prints and enlargements. Secret of each Pony's superbly crisp, clear shots is its Lumenized $f/4.5$ lens which focuses down to $2\frac{1}{2}$ feet, and its velvet-smooth Kodak Flash 200 Shutter. This combination will give you unusually fine

pictures for a camera in this low, low price range. "Average" settings are marked in red to make picture taking easy. Light in weight, it's easy to carry anywhere. Easy to use, too ... controls are so handy. The Kodak Pony 828 takes 8-exposure 828 film, including Kodacolor; costs \$31.15. The Kodak Pony 135 takes 20- or 36-exposure 135 film; has automatic film counter and stop; costs \$35.75. Either is an ideal second camera ... an excellent color camera.

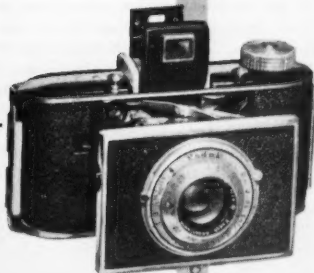


Perhaps there was never quite so apt a name for a camera as that given the *Kodak Tourist Camera*. For the Tourist is designed to "go" anywhere, take anything ... and there are four fine models to choose from.

The finest Tourist ever made is the Kodak Tourist II with the Kodak Synchro-Rapid 800 Shutter. Here is ability to get action—and get it for keeps. Yet, it takes fine portraits as well. This between-the-lens shutter has ten speeds; works with the 4-element Lumenized Kodak Anastar $f/4.5$ Lens (which focuses from $3\frac{1}{2}$ feet to infinity).

All four Tourist models permit precise steadiness in taking because the shutter release is at your finger tip, in the edge of the camera bed. The $f/4.5$ models have a new Scopesight Finder for greater framing and composing accuracy, and accept the

accessory Kodak Service Range Finder. Whichever Tourist you choose, you get $2\frac{1}{4} \times 3\frac{1}{4}$ negatives in black-and-white or Kodacolor. The $f/4.5$ models take an Adapter Kit which lets you get three more sizes, including No. 828 black-and-white and Kodachrome (28x40mm.), and half-size 620 ($1\frac{1}{8} \times 2\frac{1}{4}$) permitting 16 negatives from an 8-exposure roll. (Incidentally, oversize prints are the same size as those from a $2\frac{1}{4} \times 3\frac{1}{4}$ negative.) Still another mask gives you $2\frac{1}{4} \times 2\frac{1}{4}$ negatives, 12 shots per roll. Tourists are priced at \$26.25 for the Kodet Lens model in the Flash Kodon Shutter; the Kodak Anaston $f/6.3$ Lens in Flash 200 Shutter at \$46.25; the Kodak Anaston $f/4.5$ Lumenized Lens in Flash Kodamatic Shutter at \$72.55 and the Lumenized Kodak Anastar $f/4.5$ Lens in the Kodak Synchro-Rapid 800 Shutter, \$97.40. Adapter Kit, \$13.25.



Another handy camera for tourists and "stay-at-homes" is the *Kodak Flash Bantam* $f/4.5$. It's so small it fits easily into a coat pocket. Yet it captures shots which lead to eye-filling Kodachrome screen projections, Kodachrome and Kodacolor prints, and excellent black-and-white enlargements. The

Bantam has a flash shutter with 4 speeds up to $1/200$ second, and a Kodak Anastar $f/4.5$ Lumenized Lens focusing from $2\frac{1}{2}$ feet to infinity. Finger-tip controls let you swing into action fast. Takes 8-exposure Kodak 828 film. Camera, \$56.00. Accessory flashholder, \$10.55.



For someone you know who's looking for picture-taking simplicity for those informal snapshots, the *Kodak Duaflex II* is a wise choice. Whether it's the Kodet model with its prefocused lens, or the Kodar $f/8$ Lens which focuses from $3\frac{1}{2}$ feet to infinity, either model makes snapshooting simple and certain. The large hooded reflex finder lets you "see what you'll get" and what you get can be in either black-and-white or Kodacolor ... 12 $2\frac{1}{4} \times 2\frac{1}{4}$ negatives on Kodak 620 film yielding big

$3\frac{1}{2} \times 3\frac{1}{2}$ prints. The Kodak Duaflex Flasholder fits either camera. Kodak Duaflex II, with Kodet lens, is priced at \$14.50. With Kodar lens, \$22.30. Carrying case, \$2.65.

Prices in this Kodak Bulletin are list, including Federal Tax where applicable, and are subject to change without notice.

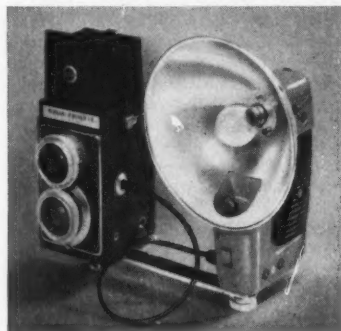
Kodak
TRADE MARK



APRIL...

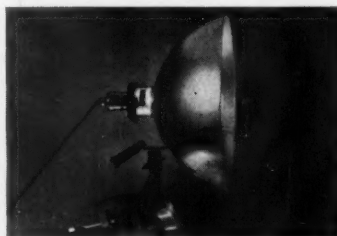
TRADITIONALLY, April means sun and showers . . . the start of spring . . . and things to do indoors and out. Let these Kodak accessories add pleasure to your April picture taking and picture showing.

Next to your camera, your lighting equipment means the most to you for indoor shooting. And if you haven't yet taken a look at the sensational **Kodak Ektalux Flashholder**, you've a treat in store . . . the



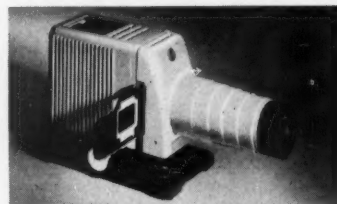
store being your Kodak dealer's, of course. For here is genuine professional equipment for the most advanced work, with a *high-energy, battery-condenser-type flash unit scientifically designed for holding*. The Flashholder plugs into your flash shutter. If you're using a press-type camera that doesn't have a flash shutter, you can use the Kodak Ektalux Synchro-Switch with a Kodak Ektalux Solenoid. Put two 22½-volt photoflash batteries in the Flashholder, and you can fire as many as seven lamps at one time (using Ektalux series-wired extension units). With one 22½-volt battery, the Flashholder fires as many as three lamps. Ektalux extension units stand on any surface, fit a tripod, or accept Kodak Extension Unit Clamps which attach to any convenient object. Each extension unit comes with a 20-foot cord. Altogether, the most precise and versatile photoflash equipment you've ever seen. See this Ektalux Equipment soon . . . at your Kodak dealer's. Flashholder prices start at \$29.75. Extension units, \$12.40 each.

To give your lighting equipment well-rounded versatility, the **Kodak Vari-Beam Lights** fill the bill. Both adjust for narrow,



medium-wide, or wide beams of light. Reflectors are big—12 inches wide—of anodized aluminum and accept No. 2 photofloods. The Standlight, with its tubular aluminum column, telescopes from 3 to 5½ feet in height, and is priced at \$16.00. The Clamp light has an adjustable locking bracket on a padded clamp to make it easy to attach to chair arms, etc. Price, \$10.50. Prices less lamps.

Raining or not, it's always time to have a Kodachrome "show," and this **Kodaslide Projector 2A** is the ticket—everyone's



"ticket"—to entertainment. Its optics are Lumenized, to give you greater color purity and more screen illumination. Images hit the screen big, sharp, brilliant. Two lenses are available. For average-size rooms, the superb Lumenized Kodak Projection Ektanon 5-inch f/3.5 Lens is the one you want. For larger-than-average rooms or lecture rooms, you can use the 7½-inch f/4 lens. The slide carrier works easily as does the lens barrel, which rotates for sharp focusing. Elevating is simple, too—a knob adjusts the 2A up to 10° above the horizontal. Comes with a 120-volt, 150-watt lamp

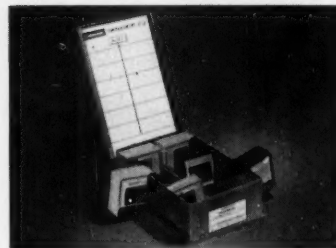
(other lamp voltages can be used). AC or DC. With 5-inch lens, \$52.80; with 7½-inch lens, \$63.45. Case, \$15.00.

If you're interested in quick showings of your color slides without interrupting someone's reading, you can do it nicely with the **Kodaslide Table Viewer, 4X**. Projector and screen are one compact unit.



You plug it in, insert your slides, get beautiful four-times-enlarged pictures on the Day-View Screen . . . in any lighted room. 3-element, Lumenized Kodak Projection Ektanon Lens, 50mm. f/3.5. Focusing control. AC-DC, 100-120V. \$49.50. Carrying case, \$15.50.

To hold your color slides in order, fully protected, the **Kodaslide Compartment File**



has 12 swing-out compartments for easy slide removal. Index on cover. Takes 240 cardboard or 96 glass slides. \$3.94. **Kodaslide File Box** holds 140 cardboard or 55 glass slides. Separators for filing by subjects. Metal. \$1.57.

Indoors and Out



THESE Kodak accessories can add ease and facility to your outdoor picture taking . . . and some of them will help you bridge the photographic gap betwixt "good" and "superb."

One of the most helpful of outdoor accessories is a **Kodak Carrying Case**. Your



camera is protected from the elements. The shoulder strap makes your camera easy to carry, and it's always ready to use in a jiffy. Kodak Field Cases are expertly designed, made with the finest leather and workmanship . . . Duaflex models are of leatherlike plastic. Each field case has a tripod opening, too.

While you're on outings with other people, there are times when you'd like to get in the picture with them. The **Kodak Auto-Release** lets you do it, for it automatically trips your camera shutter about 10 seconds after it's set. Any camera with a cable release socket can use it. A spring clip holds the cable release firmly. \$3.86 (cable release not included).

Precise focusing is essential to good pictures. If your camera doesn't have a range finder, the **Kodak Service Range Finder** is very useful, especially for your close-up shots. It's a split-field, military-type range finder; you merely set it so that the split image seen through the eyepiece becomes a single image, and then read your correct focusing distance on the scale. Adjusts for subjects as near as two feet. Some cam-

eras, such as the Kodak Tourists, already have a range-finder bracket which permits easy attachment. Price, \$12.50—case included.



Still another photographic aid to have with you is the **Kodak Master Photoguide**. It's so compact it barely covers your hand, but it's packed full of photo data, with every computing device you need. You get tips on basic exposure, film data, flash guide numbers, as well as speedy dial calculators for daylight shots, flood, flash, field depth, and effective aperture. Field depth computing, moving subjects, close-ups . . . they're all covered, together with filter and Pola-Screen data, with a set of four contrast viewing filters to help you "preview" your shots. You shouldn't be without it, and the price is only \$1.75.



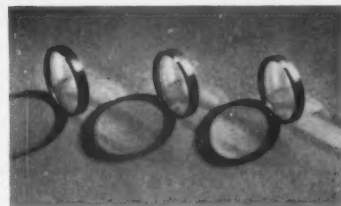
Whether you own a simple box camera or one "with everything," **Kodak Wratten Filters** can help you achieve individual pictorial expression. Your black-and-white scenics can be dramatized with rich dark skies . . . you can reduce atmospheric haze . . . modify the black-and-white rendition of brightly colored subjects . . . obtain better skin tones in portraits. You'll find a

new world of photographic enjoyment when you start using Kodak Wratten Filters.

For color work, especially, you'll want a **Kodak Pola-Screen**. This polarizing filter often enables you to obtain a richer sky tone without materially altering other tonal values or colors in the picture. It can also be used with black-and-white film, and is very useful in controlling reflections, and in photographing through glass or water.

Kodak Combination Filter Cases are available also for Series V or Series VI filters. They're handsome, two-compartment, felt-lined leather cases, priced at \$4.25 (Series V); \$4.95 (Series VI).

Kodak Portra Lenses 1+, 2+, and 3+, let you get startling close-ups of flowers,



animals, people. They demand no change in exposure. You need only measure the lens-to-subject distance and set the camera focusing scale at the point shown in the distance table. Portra Lenses can also be used in combination for extreme close-ups. They attach easily with Kodak adapter rings.

Prices in this Kodak Bulletin are list, including Federal Tax where applicable, and are subject to change without notice.

EASTMAN KODAK COMPANY
Rochester 4, N. Y.

Kodak
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We call it the ROYAL

**because it's the finest personal movie camera
Kodak makes**



**Or—for fullest
movie-making economy
BROWNIE MOVIE CAMERA**

This sensational \$43.30 8mm. newcomer is bringing movie enjoyment to thousands of budget-minded picture makers. It's as easy to use as it is to buy. Its fast lens needs no focusing. You merely check its built-in exposure guide, set the lens, sight and shoot. Sprocket-less loading, too. And it makes a week-end's activities into movies for as little as \$3.95 in full color, processing included!

It's TRIM. It's talented. Its outstandingly superb Kodak Cine Ektar $f/1.9$ Lens will make you the finest movies you have ever screened. Yet, despite its versatility, the Cine-Kodak Royal Magazine Camera is one of the easiest of all cameras to enjoy. Because of its simplicity . . . its many picture-making refinements . . . its ready acceptance of accessories which will match your growing movie aspirations stride for stride . . . it is very likely *the* 16mm. camera for you.

Read of some of its advantages below . . . see it at your Kodak dealer's. And remember that the list price of the "Royal" is but \$176.25. (The "Royal" is also available with prefocused $f/2.8$ lens at \$162.15.)

Check these features against your concept of the ideal 16mm. camera!

Loading: with full-color or black-and-white Cine-Kodak Film in preloaded magazines . . .
Lens: superb $f/1.9$ "Ektar," focusing from the horizon to a mere 12 inches, with a film-plane marker to help assure crisp ultra close-ups . . .
Speeds: 16, 24, 64 (slow motion) frames per second—single-frame or continuous-run exposures, too . . .
Finder: enclosed—and calibrated to show the fields of standard lens and of eleven accessory lenses ranging from wide-angle to 6-times telephoto.

Prices include Federal Tax and are subject to change without notice.

EASTMAN KODAK COMPANY, Rochester 4, N. Y.

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SUCCESSFUL PRINT RETOUCHING

by Carl K. Kelly



Above and at the right is an example of retouching a print using dyes. Both the black spots caused by pin-holes or defects in the negative may be bleached out and matched to the surrounding areas, and the white marks from other types of defects may be so blended that it is impossible to find them. These, and other examples illustrating the article, were provided by John Reiner.

THE SMALL FILM CAMERAS have many advantages as their popularity attests. They are fast to work with and they have an inherently greater depth of field. They are also more economical and permit a greater number of exposures at the same minimum cost. These are advantages to any photographer, amateur or professional.

They do have, however, one disadvantage and that is the difficulty of doing much retouching directly on the negative.

This limitation means that more work must be done on the print itself. In turn, this raises not one but two \$64 questions. First, how much retouching work can be done on each print? Second, how much of this needed work can be done and still allow the photographer a worthwhile profit?

In the case of the amateur interested in just one or two finished prints so that time and effort are not limiting factors, he has only the one objective in mind—the best possible job that he can produce. For the professional it is a different story. Granted that he, too, is interested in the best possible job, his story goes like this—how much *time* to maintain how much *quality* for how much *money*.

Of course the ideal way is to do all retouching on the negative thus making finished prints a simple matter. This still can be done but it takes a fairly large image to work on.

As is almost always the case, as new problems come up, new methods and materials also come along to help solve them. A capable retoucher with proper and dependable materials can, in the space of five minutes' time, accomplish an astounding amount of good work.

The necessary equipment includes a bottle of 10 percent ammonia (as already mentioned in the previous article on negative retouching), a water color palette or a piece of opal glass or a dish on which to mix colors, some small fine-pore blotting up sponges and good





At the right is a frequent effect when fine blonde hair is back-lit against a dark background. The tiny ends of hair are sharply obvious against the ground and spoil the effect of the portrait. Above, a simple application of dye with a very fine brush has blended these into the background and given a smooth hair-line.



Small details may be worked on with dye and the surface of the print will not betray it. At the left are slightly irregular eye lashes which have been strengthened, above, to give a more regular look.

brushes, a No. 1, No. 2 and a No. 3, a glass of water and a selection of retouching dyes.

The speed of retouching and the quality of the finished print *both* start as the print goes into the hypo bath. That is because many troubles start with the hypo bath. If you want uniform and dependable prints to work with, then do not use a hardening fixing bath. Instead use a standard non-hardening fixer.

There are two reasons for using this. The first is that the longer a print remains in a hardening fixer, the harder will be its emulsion. Because the gelatin in the emulsion shrinks as it hardens the print will curl more than normally. Secondly, every print fixed in a non-hardening bath, regardless of the fixing time, has the same degree of hardness in the emulsion and when you are retouching a series of the same subject this *is* important to consistent, good work.

After the prints are fixed and washed, squeeze and blot them free of water. This is the best time to do any bleaching work and to remove those annoying black spots. (Farmer's reducer, iodine bleach or the new SpotOff product are excellent.) Spot fix the bleached areas with a swab of the same hypo fixer and let the fixer stay on the spot for about five to ten seconds. Wash prints for ten minutes more and then dry them.

There are quite a number of materials which have been used one way or another for retouching: India ink, Chinese ink sticks, water colors, pencils, crayons of all kinds and dyes. Of this array only the dyes penetrate into the emulsion and become a part of the image and are not detected even on glossy prints. The others are of a pigment nature and remain on the surface where they may be noticeable or accidentally removed. Dyes are ideal for retouching from the standpoint of speed, control and quality of the finished work.

Since the paper sheet dyes sold in tab or booklet form have a filler in them which forms the coating on the paper, you will find this filler interfering with your work. It is better to use the bottled materials (Peerless, Webster and Spotone are all familiar names).

As you work with various photographic papers, you will find a surprising degree of color variation from one brand to the other. Some contact papers and the straight bromide emulsions have a cold black color. The many makes of the chlorobromide enlarging papers are definitely on the warm black side. Chlorides such as Opal G, Indiatone, and Veltura, are quite olive in color. Even though you stick to only one or two makes of paper, varying times of development and temperature, old or new developers will have an effect on the color of the emulsion.

Therefore, in order to turn out the finest work, it is necessary to have a range of colors from which a series of off-shade retouching colors can be mixed. If you do an occasional sepia or selenium toning job then you will need colors to match them. A complete stock of retouching colors is a good investment and the basic colors are black or neutral, blue-black, selenium brown, sepia and

olive. (Manufacturers now supply separate bottles as well as the standard sets.)

Contrary to the practice with water colors, it is not necessary to mix a matched tone of color for every tone on your photograph. Three tones of the dyes on your palette are quite satisfactory, a light, a medium and a dark one. The colors penetrate and the longer you keep your brush in contact with the spot, the darker grows the retouching. So in this way it is only a matter of about two seconds between one to four different tones in a range.

Always dampen the area of the print when you are going to do your retouching. A damp retouching sponge or wad of cotton is enough.

Starting out with a strength of color lighter than the spot, is a "must" for good results. As the retouched tone builds up you will avoid getting the spot too dark. Also, when the brush is kept in motion you will avoid hard edges on the spots. Should the retouching prove to be too dark, just dab a drop of clean water on top of the spot, let it set for a minute or so and then blot it up. The standard routine of the average print is stray hairs, catch lights in the eyes, a little more punch to the lips and, of course, the white spots.

If you are working with a series of six or more prints of the same subject, you can work more accurately and save more time by retouching *all* of the light spots of *all* of the prints, one after the other. Next, do the same thing with the range of middle tones and, lastly, follow the same plan for the darker ones.

Notes and suggestions:

- Be sure to buy the finest brushes and retouching colors that you can secure. Don't try to use colors that have been dried up on your palette for more than a day. The dust they collect there will cause trouble. Start with fresh colors every day.
- Always work with a piece of lintless blotter or fine-pore cellulose sponge and blot up the "pull back" of color every time you lift your brush. Always have your retouched tone on the print just a little lighter than the photographic tone. If the color dries up a bit darker, then it will be just right.
- Use a slight circular motion as you apply the color if the spot is round in character. Use shuttle strokes if it is an elongated spot.
- When mixing a color to match a print, be sure you let the retouched spot dry before you judge it. Colors as a rule dry up a little darker and a little colder.
- On prints to be ferrotyped, the best time to retouch them is before ferrotyping. Squeeze the print free from droplets, blot and retouch. Flood tin with water, place print on it and squeeze it down.
- In case of an accidental drop of dye on a print, blot up the most of it as soon as possible, then put a drop or two of the 10 percent ammonia solution on the spot, let set for about ten seconds and then place the print emulsion side down in a tray of clean water. Keep it there until the color comes out.



FOR MEMBERS ONLY

by Victor H. Scales, Hon PSA

FOR MEMBERS ONLY is dedicated to the news, views and articles of photographic organizations, with special emphasis upon camera clubs and their operational problems.

Neither publication nor editor pretends to omniscience. Rather, they believe that photographic organizations and their activities are essential to photography, and that the good purposes of photography are served by providing these organizations, whether professional or amateur, with opportunities for exchange of news, views and constructive comments.

Especially is it believed that an exchange of experiences and a positive approach to current situations will be helpful to camera club managements and members. Further, it is hoped here to report the constructive activities and services of all organizations which serve the photographic arts, sciences, and industry.

To these desirable ends, photographic organizations are requested to direct bulletins, house organs, and releases regularly to: FOR MEMBERS ONLY, American Photography, 136 East 57th St., New York 22, N.Y.

Field Trips Essential Features Of Camera Club Programs

April means that spring has rounded the traditional corner and everybody and everything is ripening for action. Technically, this is the vernal urge. So far as camera clubs are concerned it means that field trips definitely are indicated.

Field trips are important to camera club life as factors for education in and practice of photography. They contribute highly valuable sociological and organizational benefits and are worthy of good planning.

Practice for Proficiency

No amateur makes much photographic progress merely by attending lectures. Proficiency requires practice, which is, essentially, getting mistakes tucked away in the past. Field trips enable club members jointly to practice, to apply the lessons of the lectures, and to learn from each other.

Practice includes developing the ability to see pictures. Picture-blindness is more prevalent among club members, especially beginners, than generally is recognized. On field trips neophytes find opportunity to see pictures in the making and to develop their own talents of visualization.

It is possible that club members could make equal progress by going out in twos or threes or alone. They could, but as a rule they don't. Club field trips thus are inspirational to the extent of inducing club members, as a group, to get out and get at the business of photography.

Formalities disappear. Members start operating on a first-name basis. They learn from each other. The pictures they make are the more valuable to them because of sentiment and association. And when they see each other's pictures, they learn to apply the lessons of the trip.

Organizing and Planning

The more successful field trips are properly planned, organized, and directed. Not to the point of regimentation, but to the extent of placing members at photogenic locations at times when the lighting is propitious and enabling them to get all the pictures they should have without getting in each other's way—or hair.

Good field trips start with advance scouting. Locations should be found which are rich in picture possibilities and which may be reached in minimum time by public, private or chartered conveyances. They should be sufficiently commodious for the club without congestion and all permissions and concessions must be in order to avoid argument and misunderstanding.

Scouting calls for planning the progression from one subject to the next so that all members enjoy favorable camera locations, lighting and models without conflict. Planning also requires that members will find transportation, eating places, comfort stations and other necessities conveniently available. The secret of good planning is to have members busy with their cameras during suitable light hours, dining or resting when the light is less satisfactory.

Selecting the Location

Selection of field trip locations is an art in itself. Obviously the place must suit the attendance. Only trouble can result from unloading 200 rabid amateurs at a spot where only 20 can spread their tripods. On the other hand, field trip benefits can be lost by scattering ten photographers over a square mile.

Unless permission is obtained and plans fully developed, it is unwise to unload a busful of camera fans at a crowded resort spot. Hobbies do not necessarily mix. At the same time it is wasted effort to take the average club to a place where only an esthetic miracle could produce a picture.

Planning the Informalities

The more enjoyable field trips are so thoroughly scouted, planned and directed that everything enjoyable seems to happen naturally. The conveyances arrive at an interesting spot when the light is intriguing. Native or imported models materialize with encouraging promptness and cooperative attitudes. An adequate number of subjects invite the members naturally to disintegrate into small groups and start shooting in different places without interfering with each other.

Wise planning suggests also the appointment of group leader: to superintend the rotation of groups and subjects and particularly to help the beginners with their equipment and operation. Fullest realization of the benefits grows from developing subsequent print contests based upon pictures made during the trips.

CLUB AGENDA

Camera clubs finding themselves at a theoretical crossroads, with print contests waning and slide contests growing, wonder if they should continue as "camera" clubs or become "color" clubs. This is no new situation. So long as photography is a vital, living progressive activity, there'll be changes. Choice right now actually isn't just between prints and slides, but between prints, slides, stereo, movies, nature, portraiture, pictorial, documentary, illustrative—and some dozen or 20 other facets of photography.

There's a pattern here. All these activities necessitate using the camera! There is no good reason why any club cannot continue to be a camera club, with its members using their various cameras as they please, and an active and diversified club program comprehending the whole range of camera activities.

Should the rejection of print or slide by the judge of a club's monthly contest be accepted as final or should a rejected picture be resubmitted in future judgments? Any judge may, unconsciously or unintentionally, reject a picture of great merit. Furthermore, monthly contests are affected by permutations and combinations, so that a picture which looks none too well this month can be outstanding the next.

Monthly contests are part of the camera club educational process. They need not be final, or fatal, for any member's picture. In fact, it could be more educational were any rejected pictures to be resubmitted until, spurned by several judges, even the maker is convinced that perhaps the trouble is with the picture!

Club program directors looking for new features will be interested in the current controversy over photographic *isms*. Especially the one which proclaims pictorialism to be "dead."

Pictorialism has been such a lively corpse for so many years that it must, by now, find some enjoyment in reading its own repetitive obituaries. More to the point here is that those who desire to bury pictorialism have had something better. And their pictures should be more convincing than their arguments.

Club program directors might engage as speakers practitioners of the photographic approach variously called "modern," "creative" or "new," for the expounding of their philosophy and, above all, the display of their pictures.

Clubs having difficulty in finding new features for meetings, programs need look no further than the Pictorial and Color Divisions of PSA. Pictorial is operating Print Circuits for the exchange of pictures

and comments among clubs. Individuals enjoy the same benefits through the Portfolios. Color has inaugurated both Slide Study Groups, for individuals, and Club Slide Circuits, for exchange of slides and comments.

Presentation of club and individual circuits comprises a full and beneficial evening's program. Clubs holding frequent meetings can develop additional programs by inducing members to join the circuits for individuals and to bring the material to the club meeting whenever it becomes available.

The cost is a matter largely of postage. The benefits are invaluable, not only because the club has material for programs, but through contacts with other clubs and individuals. For information address:

Slide Study Groups, Dennis W. Pett, Apt. 227, West University, Bloomington, Ind.

Club Slide Circuits, Erik Sorensen, 3336 Roscoe St., Chicago 18, Ill.

Print Portfolios, Eldridge R. Christhill, Suite 406, 800 Davis St., Evanston, Ill.

Camera Club Print Circuits, W. R. Hutchinson, P.O. Box 367, Newburgh, N.Y.

Many camera clubs are avoiding unnecessarily arbitrary decisions in monthly print contests, providing tangible rewards, and seeing their competitions grow harmoniously and substantially. Trouble customarily arises when judge or jury is required to select one "best" picture from heterogeneous portraits, character studies, landscapes, still lifes, marines, nudes, photographs, abstracts, nature shots. Happy alternative is asking judge or jury to select a group of pictures, giving each equal rating as outstanding.

While, in final contests, there may be good reason to select one top-ranking picture and to rate others numerically, it has been found preferable in monthly contests to select an established proportion of the entries. Customarily this proportion is 20 percent. If 15 pictures are entered, judge or jury selects three. If 50 are entered, ten win fame. Each picture in the selected group receives the same score. Seasonal winners are those who achieve the most frequent acceptance throughout the year.

Proportions and percentages may be established by the club to suit its particular objectives. Major idea is to reward as many participants as possible without reducing standards of quality. Severity of competition may be regulated by adjusting the percentage of pictures to be selected.

Tangible rewards take the form of simple colored ribbons. They may cost the club ten cents each but are worth \$1,000,000 to recipients. Presentation of the ribbons by the judge provides appropriate ceremony. The ribbons are imprinted with club name and title of contest. Clubs conducting multiple contests use a different ribbon color for each.

Voices of Turtles, Contest Judges Herald Debut of Another Spring

Springtime's vernal urge has numerous manifestations in the camera club world. Added to the voices of the turtles are those of the final judgments of print and slide contests.

Now the contest directors down their sulfur-and-molasses and pore over rosters of available judges. By argument, cogitation or speculation they select the final arbiters. Then enter upon a trying period of hoping that the results will be such as to occasion no challenging of the probity of themselves or ancestry.

Possibly debate, heavy thinking, coin-tossing and taking calculated risks with strangers are ways as good as any for selecting the final judges. Yet serious questions inevitably arise, including that high-bracket poser—what makes a judge a good judge?

This question haunts many a camera club management and deserves serious consideration. Is the maker of excellent pictures a good judge on the basis of ability? Is he or she who has made many pictures over many years qualified to judge on the basis of experience? What makes a judge a judge anyway?

Experienced camera club executives who have studied the matter appear to be inclined to the belief that judging is a matter neither of *making* nor of *knowing* picture, but of *weighing their relative merits*. Ability includes the recognition of good technique and the experience to recall pictures other than those being judged. Another obvious need is for a balance wheel in the way of judicial temperament.

Judicial temperament appears to be a combination of abilities, so far as the photographic judge is concerned. It includes the ability to make pictures to the extent of appreciating the possibilities of the medium, the ability to recognize picture excellence because of having seen, or made, many pictures and, finally—to subordinate personal preferences and prejudices, to weigh the relative merits of the entries in the light of the objectives of the competition, and, above all, to reach a considered decision as to which pictures exhibit superior qualities.

In other words, the capable judge may be said to incorporate a combination of desirable attributes. In order of importance these are judicial temperament, experience, ability.

Where are such judges to be found? And how do they get that way? The dog, horse and flower show people apparently have given up trying to find the answers or the judges. They train them! Candidates undergo a prolonged novitiate functioning under the eyes of accepted judges. They are called upon repeatedly to demonstrate ability and experience, to *prove* that they can suppress personal preferences, judge solely on the basis of quality.



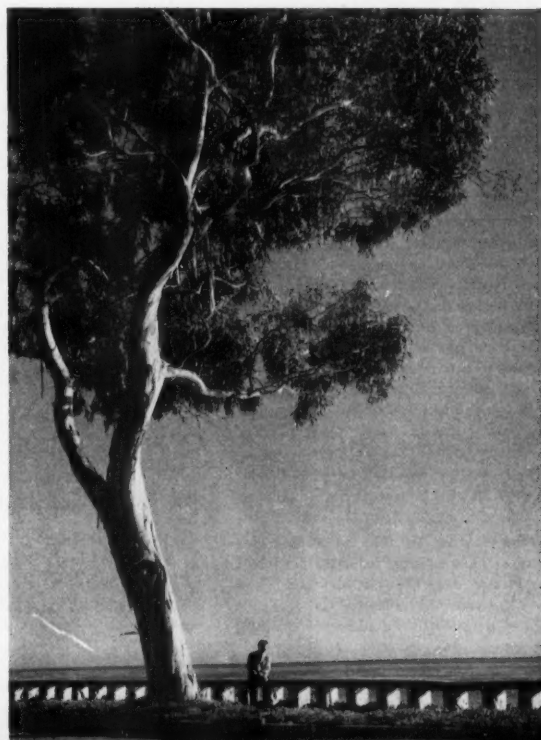
First award in the April Print Competition goes to Ward Dorrell for his "Sunshine and Shadows," opposite. J. A. Goldsack and Le Cook receive mentions for "Country Winter," left, and "Far Away Places," below.

MONTHLY PRINT COMPETITION

WARD DORRELL of Bronxville, N.Y., wins this month's competition with "Sunshine and Shadows." "Country Winter," by J. A. Goldsack, and "Far Away Places," by Le Cook each receive mention.

No exposure data is given for Mr. Dorrell, who is associated with the Rockefeller Center Camera Club. Mr. Le Cook's picture was taken near Santa Barbara, Calif., with a 4x5 Speed Graphic using a G Filter. He is affiliated with the Photographic Print Society of Salt Lake City.

Mr. Goldsack, a member of the Miniature Camera Club, exposed his film 15 seconds at $f/8$.





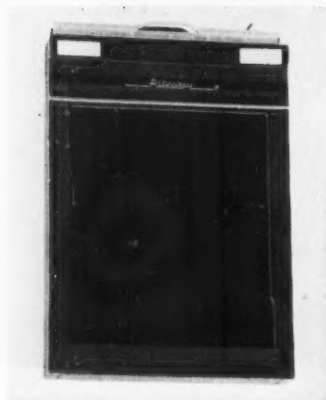
NOTES AND NEWS



2 1/4 x 3 1/4 Three Lens Camera

A new Linhof product, the *Super Technika 23* will soon be available on the camera market. Among its features are rapid lens changeability and the Linhof Tri-Cam Coupling Disc which permits instant coupling of the multifocus rangefinder to any three lenses selected for use. A single automatic distance scale serves all the lenses and is located beside the rangefinder eyepiece. *Super Technika* also has a vari-view optical finder, a parallax-compensating, large-image viewfinder and one eyepiece which serves both view- and rangefinders.

Triple extension bellows; rising and tilt-back front; drop bed; revolving, swinging



and tilting back for all planes; leather focusing hood; two-position body release; adjustable hand strap; flashgun bracket; accessory clip and depth of field scale are all included.

The camera accommodates 2 1/4 x 3 1/4 standard press-type cut film holders and film pack adapters. In addition it contains a rollfilm holder for using 120 film. Three Schneider coated lenses are standard equipment: Xenar f/3.5 105mm normal lens, Angulon f/6.8 65mm wide angle lens, Tele-Xenar f/5.5 180mm telephoto—each of which is mounted in a fully synchronized M-X Compur Rapid shutter. Price, complete, tax included, \$575. Please refer to AMERICAN PHOTOGRAPHY when writing for further details from Kling Photo Supply Company, 235 Fourth Avenue, New York 3, N.Y.

Safety Junction Box

A four-outlet safety molded rubber junction box is said to be ideal for use with multiple or heavy electrical equipment and should be very handy for the photographer. The plugs clamp in and the box itself is portable and has a durable finish. A great advantage is that it cannot ground out. Price, \$7.95. Please mention AMERICAN PHOTOGRAPHY when requesting information from O. A. Windsor Company, Dept. P.9, P.O. Box 505, Santa Monica, Calif.

One-Piece Film Holder

Riteaway, a 4x5 sheet film holder recently developed by Graflex, Inc., is said to have unprecedented ruggedness, greater handling convenience and finer construction accuracy than is required by ASA standards. A flat backbone of stretcher aluminum forms the holder's core which is bonded, under several tons of pressure, to a thermoplastic frame to form a one-piece unit. This is claimed to have very accurate registration distance as well as to survive severe tests normally fatal to wooden holders.

Because of the nature of construction there are neither nail holes nor rivet and glue joints where stray light might be admitted. Besides a spring fingered light trap, light trap rails further protect film against light. Loading tabs have been redesigned for easy film insertion and removal. Price, \$4.05.

Wide Angle Lens for Exakta

With a 57° viewing angle and designed for specific types of wide angle work, the new Steinheil Cassaron 40mm f/3.5 wide angle lens provides a faster than average extra lens at exceptionally low price, the manufacturers say. The lens enables the photographer to cover a wide field of view at the same subject-to-camera distance which is a must in interior photographic work. Price, \$49.50. Information sent upon request from Exakta Camera Company, 46 West 29th St., New York 1, N.Y. if AMERICAN PHOTOGRAPHY is mentioned.

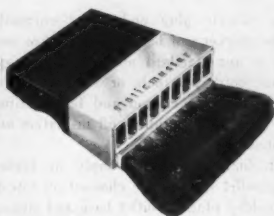


Punch Kit for Album Binding

The *Midget Punch Kit*, consisting of a simple wood and metal punch and more than 150 crack resistant vinyl plastic tubes, is a handy device for making a photograph album. Either permanent or loose-leaf books can be made with the set. The binding process consists of only a few steps. Covers are selected, photographs punched and binding tubes inserted into the holes. *Midget Punch Kit* is offered by the manufacturer on a two weeks' trial basis. Please mention AMERICAN PHOTOGRAPHY when requesting your kit. Write Tauber Plastics, Inc., 505 Fifth Avenue, New York 17, N.Y.

Mascot Meter Case

A suede-lined redwine bridle cowhide case is now available for the G. E. Mascot light meter. The case is saddle stitched and features an enclosure that swings out of the photographer's way when he is taking readings. Price, \$1.75.



Brush Removes Static Electricity

Designed primarily for photographers, the new three-inch *Staticmaster* is a tool for removing static electricity from negatives and for cleaning color transparencies before mounting. It also may be used for removing dust from printing frames, lenses, enlargers, optics, printers and film holders. As the bristles remove dust and lint from these surfaces a strip of polonium incorporated in the brush acts as a neutralizer, thus eliminating static electricity. Thereafter, the surfaces will not attract either dust or lint unless they have been recharged by rubbing or handling. For ease in handling, the ebony enamel handle has a curved recessed area on its under side. Price, \$12.50. Please say you saw it in *AMERICAN PHOTOGRAPHY* when writing for further details from Nuclear Products Co., 2150 Newport Blvd., Costa Mesa, Calif.



Demonstrator for Movie Lenses

The *Animar Lens Demonstrator* is a Bausch and Lomb optical instrument enabling the photographer to look through various types of movie lenses to see the image which would be produced by a particular lens, whether it be normal, telephoto or wide-angle. Similar in design to a telescope the demonstrator has a revolving turret accommodating three 8mm or 16mm lenses. Such "look-see" comparisons may be made with high speed as well as normal lenses.

135mm f/3.5 Telephoto Lens

Designed to fit the Exakta's bayonet lens mount, the Angenieux 135 f/3.5 lens produces an image almost three times that of the standard lens. It gives maximum detail, minimum distortion. In addition to a depth of field scale the lens has a range of stops from f/3.5 to f/3.2. It is priced at \$75.30. Additional details will be supplied by Exakta Camera Company, 46 West 29th St., New York 1, N.Y. if *AMERICAN PHOTOGRAPHY* is mentioned.

Two- and Three-Light Bars

- The two-light bar *Victor Bar-Lite*, Model 12 for movie or still camera work is suitable for all types of reflector-flood or spot lamps. It is conventional in style and provides camera mount on a padded platform. While there is a Bakelite grip for hand use, a socket for mounting on a tripod is also provided. A handy decal on the back of the bar gives exposure data. Price, \$5.95.
- Designed for industrial and commercial photography the *Victor Tri-Flood* model L38 is a compact punch light for any reflector-flood or spot lamp. It mounts on a 3/4-inch stand rod or stud without extra parts. A handle without a locking device controls angling for various light positions and, specially designed, a universal swivel permits horizontal as well as vertical angling. Model L38 also has a 15-foot cord and cord clips to facilitate winding, and a switch mounted in the back panel. Finish is glow-tone hammertone. Price, \$7.95 without lamps.

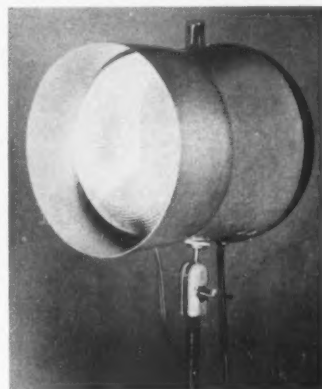
Please mention *AMERICAN PHOTOGRAPHY* when writing the manufacturer, James H. Smith & Sons Corporation, Griffith, Ind., for further details.

Safelight Features Heat Vent

Featuring a light-tight built-in heat vent which extends considerably the life of both bulb and filters, the *Johnson Allways Safelight* is available with orange, red or green filter. It is equipped with cord and socket and is finished in a white enamel interior, rust-proof red enamel exterior. Price, \$7.50.

Three in One Flash Unit

The new *SR Monostrob II*, weighing only five pounds, serves as a basic pack by itself or is a readily adaptable unit for



home or studio use with the addition of accessory attachments. The unit has a self-contained reflector and FT110 flash tube and can be used with any X type shutter or built-in photo tube triggering system for firing in synchronism with any type of electronic flash.

When the *Shorty Snoot*, a small accessory, is attached to Monostrob II (see accompanying photograph), the photographer has a modeling light with which he can employ the Holograph Diffuser Refractor to obtain the warm, even lighting necessary for portraiture.

It is necessary to wait only six seconds between flashes. A telltale light at the back of the case lights up as soon as the unit has been fired. Featured also is the RCA 5823 trigger tube, Sprague electrolytic capacitors and replaceable chassis for easy servicing. *SR Monostrob II* sells at \$192.50. *Shorty Snoot*, \$24.

NOTES AND NEWS

Two Cameras from Balda Works

Recently introduced to the American market are two new folding cameras, the *Baldalux 120* and *Baldinette 35*, which are now available at many camera stores throughout the country. Each model has all metal body, sturdy bed struts and lens standard, leather bellows, coated lens, safety hinged back cover and controls which are easily visible. Both have synchronized M.F.X. Prontor SV shutter for all flash sources at all speeds, built-in self timer, speeds from one second to 1/300, body release, cable release socket and double exposure prevention devices.

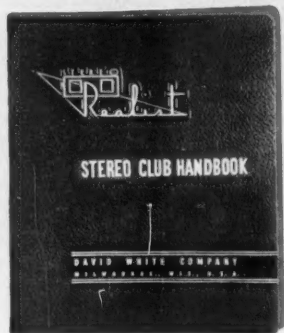
Baldalux 120 takes eight 2¼x3¼ prints in color or black-and-white, or 16 pictures half that size if a mask is used. This model



has a recessed film pressure plate, two finders (telescopic optical and reflex), two tripod sockets and film windows equipped with safety covers. Its fully corrected four inch coated Radionar f/4.5 lens focuses down to three feet. Price, \$49.95. Leather case, \$6.50.

Baldinette 35 takes either 20 or 30 exposures on regular 35mm film cartridges in both black-and-white and color. Lightweight and compact, it is the size of two packages of cigarets, has a built-in telescopic finder, accessory clip on top of the camera, automatic film stop and counter and fully corrected two-inch Radionar f/3.5 lens. Price, \$49.95. Case, \$7.95.

Additional information may be obtained from Kling Photo Supply Corporation, 235 Fourth Avenue, New York 2, N.Y. Say you saw it in *AMERICAN PHOTOGRAPHY*.



Handbook for Stereo Clubs

The 23-page *Stereo Club Handbook* containing detailed information on the organization and operation of a stereo camera club is now being offered free of charge to stereo enthusiasts. The booklet not only gives complete information on the aims of such a club, it also suggests budgets, first meeting procedures, committees, program ideas, constitution and by-laws.

In addition there is a discussion of how to form a stereo section within the framework of an already organized club.

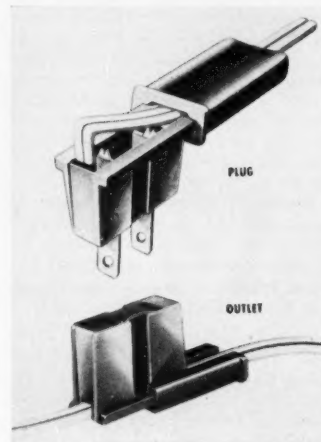
Be sure to mention *AMERICAN PHOTOGRAPHY* when writing for your copy from Stereo Club Director, David White Company, 315 W. Court St., Milwaukee 12, Wis.



Outlets "Slide On" in Seconds

An electric plug and outlet currently on the market can be attached in five seconds to any standard no. 18 lamp or appliance cord. No tools or screws are required in the operation and both slitting wires apart and stripping off insulation are eliminated.

Attachment is made simply by laying the parallel wire in the channel on top of the molded plug or outlet base and sliding a cap into place which makes the internal contact points pierce the insulation. Connections are both safe and positive and can be removed and made elsewhere without the danger of exposing bare wire. Price, 10 cents. Catalog is available with mention of *AMERICAN PHOTOGRAPHY* from Gilbert Manufacturing Company, Inc., Long Island City 3, N.Y.



Adapter for Telephoto Lenses

Wilnot Sales Corporation of New York announces a new adapter for the four element color corrected f/5.6 Steky Telephoto lens for attachment to all movie cameras with a standard screw-in mount. Price, \$1.95.

Addendum

The *Framex Auto Timer* discussed on page 54 of *AMERICAN PHOTOGRAPHY*'s February issue has now been reduced in price from \$2.85 to \$2.50. *Framex Auto Timer II* currently lists at \$4.00.

(Continued on page 74)

The intricate detail of the wall of a farmhouse, Lauenen (Bernese Oberland), Switzerland, has here been considerably enlarged. It is in actual practice that the need for preserving definition throughout the photographic process becomes important.



DEFINITION AND THE ENLARGING PROCESS

Text and Photographs by John Nichols

THE PHOTOGRAPHIC PURIST whose favorite subject is a weatherbeaten stump, and the production fashion photographer who portrays Venus in a white blouse have one thing in common: they prefer contact prints to enlargements. The purist dreads the slightest loss of definition such as might occur in projection. The fashion photographer, aside from certain advantages of production, finds that contact printing assures him the greatest perfection in representing the whites of the garment.

These two groups represent the exception to a trend which, beginning with the advent of efficient electric lamps, has caused 90 percent of all professional prints to be made by projection.

The advantages, practical and esthetic, of enlarging are obvious. Not so well-known are its drawbacks. Two of these do not concern definition, but will be included here for completeness:

- 1) Scatter of light, caused by internal reflection in the



- 1** The two prints above were made under identical conditions except that the one on the right has had a pinch of house-dust scattered on the lens before the print was made. This is one of the many points where definition can be lost and demonstrates the need for cleanliness.

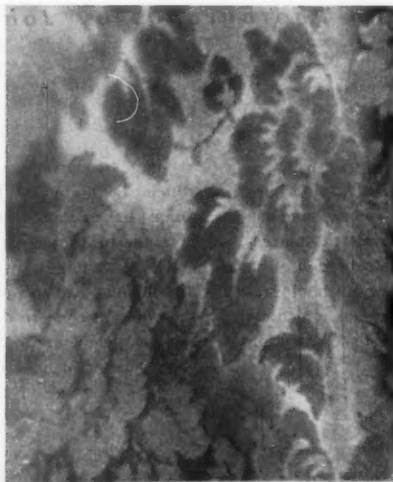
DEFINITION

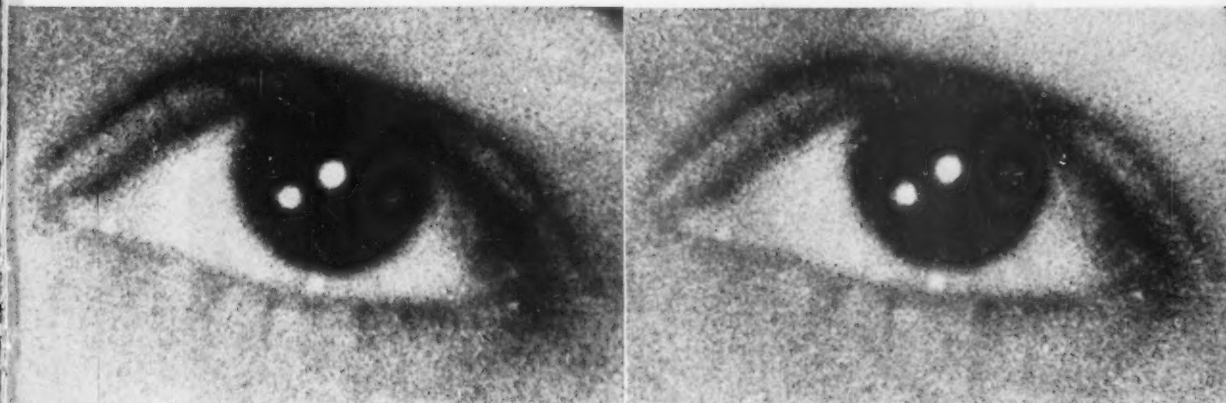
- 3** The apparent sharpness of a print is influenced by the contrast present. In the prints below, made on variable-grade paper, the soft print at left is actually as sharp as the one on the right although a casual inspection would give the opposite impression.

2

lens and other reflections, results in a grayish veil over white objects in the print which makes correct tone reproduction impossible. Clean, coated lenses and good enlarger design will practically eliminate trouble from this source. (Figure 1)

2) Bromide enlarging papers have an inherent fogging tendency. Silver bromide is less stable than silver chloride, of which all contact printing papers are made. This instability causes a silver bromide emulsion to be faster and therefore suitable for projection printing, but also causes fog which degrades the whites of a print. Ideally





- 4 These pictures above throw doubt on the old belief that diffusion and condenser enlargers differ in sharpness. When the contrast of the print from a condenser enlarger (left) has been balanced with one made in a diffusing enlarger (right) the sharpness is seen to be virtually identical. See article for details.

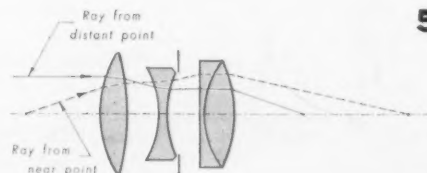
we should make our enlargements on chloride paper but few enlargers have enough light output to do this. In practice, enlargements made on chlorobromide papers, which combine the characteristics of the two halides, are almost indistinguishable from contact prints. (Figure 2)

The factors in projection printing which involve definition are: 1) illumination, 2) lens defects, 3) vibration, and 4) focal problems.

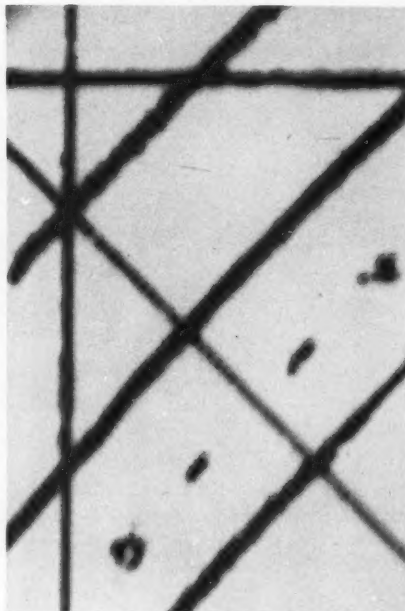
1) **Illumination.** Everyone knows that enlargers have either diffuse lighting or condensers and that correctly selected and arranged condensers direct the light from a properly positioned light source to the center of the lens. This reduces scatter to that produced in the emulsion itself and causes the light rays to travel, in reverse, approximately the path of those which produced the negative image. The gain in contrast, as much as one paper grade, results from the use of condensers and it can be shown that such print contrast increases the apparent sharpness of an image. (Figure 3) To investigate the question of whether there is any real gain in sharpness a negative was enlarged in the same machine, first with condensers, then with diffuse light (inside frosted lamp and opal glass in place of the condensers). Contrast was carefully equalized and the resulting prints examined with a magnifier. (Figure 4) The prints were remarkably alike, convincing me that the lighting system does not contribute directly to definition. The common observation that condenser enlargers show up negative scratches seems true but the equalization of contrast gave the diffuse-light print as

much graininess as the other, contrary to statements I have read on the subject.

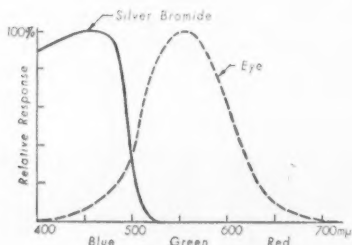
2) **Defects of Lenses.** The use of a lens for projection forces us again to review the dreary procession of the lens aberrations to which camera and enlarger lenses are equally subject, complicated by the fact that a lens design which is successful for photographing more or



Rays of light from near and far points follow quite different paths through the lens. The lens designer's calculations will differ depending on what point is assumed for the origin of the incident rays.



6 Here are identical enlargements of a corner of a test plate as enlarged through two different well-known enlarging lenses. As can be seen the major difference is in contrast, which is a major factor in apparent definition of the final print.



This graph shows the difference of response to light of silver bromide and of the human eye. The area of greatest sensitivity of the halide lies in the blue region; that of the eye in the green.

DEFINITION

less distant objects may fail when used at the larger image-object ratios used in enlarging. Figure 5 shows that a light ray originating near the lens meets its front surface at a somewhat different angle from a ray coming from a distant object, and thereafter follows an increasingly divergent path through the lens. This upsets the delicate balance between refractive indices, curvatures and air spaces which the lens designer set up with such effort and causes the very aberrations the lens was designed to prevent. (Figure 6) (The symmetrical construction is not as easily upset in this respect and many photographers use standard symmetrical lenses satisfactorily in enlargers.)

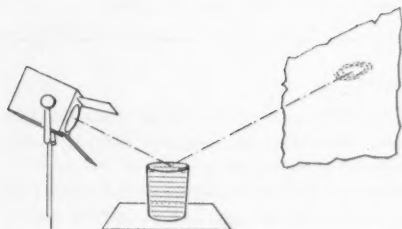
Lenses sold for use with enlargers are said to be especially calculated for this range of image-object ratios. The results of my practical test, however, suggest that one should use a focal length longer than the minimum recommended to avoid using the extreme corners of the field.

Offhand, one might think that because photographic paper is sensitive only to blue-violet light the designer of an enlarger lens would not have to worry about chro-



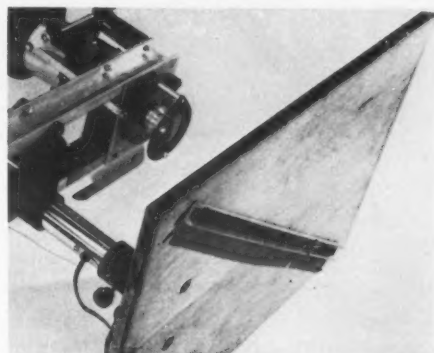
- 9 The enlarger may be attached to the baseboard by means of airplane-type shock-mounts. Vibrationless equipment is a large factor in photographic definition.

In squaring up equipment to assure the most accurate not warped. A channel-iron will sometimes correct such a condition.



- 8 This is a test for vibration. A light, reflected from the surface of water in a tumbler and against a distant wall, will quiver with the least movement.

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matic aberration. But green light is equally important. Varigam paper is sensitive to it and the human eye does most of its seeing with it. (Figure 7) Thus an enlarger lens must focus green and blue rays in the same plane.

Salesmen often recommend one enlarging lens or another as having an exceptionally "flat field." Since it is usually impossible to detect curvature of the normal field of any good lens without an optical bench the phrase is meaningless in this casual usage. It is true that designers of wide-aperture lenses for general photography allow a minute curvature of field in their designs as a compromise with (in that application) more serious defects. Presumably the designer of a medium-aperture enlarging lens would not need to tolerate any curvature.

A dirty lens will greatly reduce definition as shown in Figure 1.

3) **Vibration** may cause one element of the system to move relative to the others. If vibration is suspected it is easily detected by testing. Place a tumbler on the enlarger baseboard. Fill it with water so that it almost overflows. Then reflect a beam of light from a spotlight, slide pro-

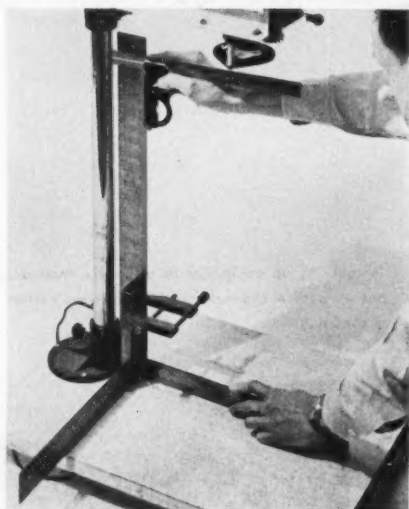
jector or clear glass bulb obliquely from the surface of the water to a wall, the further away the better. (Figure 8) Then do whatever might cause the suspected vibration. The spot of light on the wall will dance as the unstable equilibrium of the water surface is disturbed.

For detecting vibration of the enlarger head where the water tumbler idea is not practical, mount a small mirror at the end of a length of springy wire, attach the wire to the enlarger head so that the mirror is free to vibrate and reflect the beam of light from it as with the water tumbler.

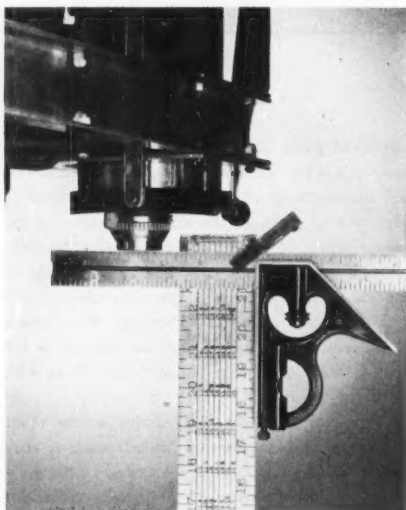
A good enlarger can be used under severe vibration conditions if several small shock mounts such as are used for aircraft radio equipment are screwed to the enlarger baseboard to give a cushion between baseboard and table. (Figure 9) If the enlarger is flimsy, this will not work.

4) **Focal Problems** cause much of the loss of definition in enlarging. The problems are those of misalignment, buckling and faulty focusing.

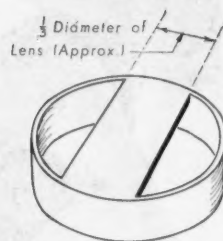
Lack of alignment will make it impossible to get good enlargements at large apertures. In severe cases one side



- 11** With such an arrangement of carpenters' squares, an enlarger may be checked to assure that it is correctly vertical. This is vital if focus is not to fall off from one edge of the negative to the opposite edge.



- 12** The enlarger head, similarly, must be checked to assure that it is parallel to the baseboard. Here, again, two carpenters' squares show that the lens is exactly square with the baseboard.



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A cut-out lens cap will aid in focusing. A cap cut such as this will project a double image when the enlarger is not in the most critical focus. The two images will fuse when focus is accurate.

DEFINITION

of the image will be seen to be in focus while the other is plainly out. More often, the condition will only be detected by careful measurement.

The first step in aligning the enlarger is to check the baseboard with a long straightedge. If it is warped it must be planed, forced straight with a cleat (Figure 10) or replaced before going further.

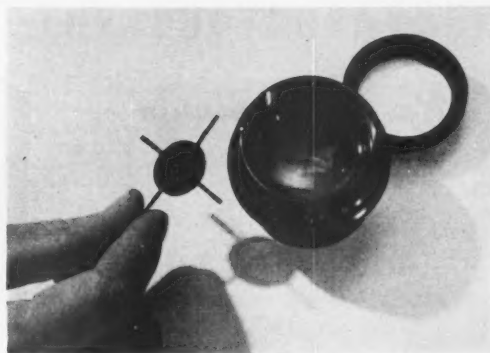
Next the column is tested for verticality by means of a Rube Goldberg like the one in Figure 11, based on a 24-inch carpenter's square. If such a square is not available a machine-cut 16x20-inch salon mount fitted close against the enlarger column may be used. You may find the column tilted slightly forward from the weight of the head. After adjusting this by means of shims the head itself may be checked with the Rube Goldberg. (Figure 12) Finally, a practical test with the lens at full aperture, project a test-plate and check with a magnifier to see that all corners of the image are equally sharp at the same setting.

Wavy or curled negatives are frequently a problem when making big enlargements with glassless carriers. Some idea of the permissible movement of the negative can be had by applying depth-of-field calculations. With a three-inch lens at $f/8$, tolerating an unsharpness of $1/200$ inch, the permissible focusing error would be $1/20$ inch either way or a total of $1/10$ inch. That is, if the negative were buckled more than $1/20$ inch a sharp enlargement would be impossible. This would not be serious except for the surprise factor: when we focus the negative is cold, by the time we make the final print the negative is quite warm and, perhaps, curled more than the permitted $1/20$ inch.

Faulty focusing can happen through carelessness, poor eyesight, dim light or difficult negatives. The example above, in which a $1/20$ -inch movement of the lens would throw a sharp image out of focus, explains how easily error can occur.

Many negatives are difficult to focus under the best conditions due to lack of contrast in subject matter. In

A reverse aperture—one which blocks the central rays rather than the edge rays—will serve as a test for the definition of your enlarging lens. How to use a stiff-paper cut-out such as this is explained in the accompanying article.



such cases test negatives may be used. Satisfactory focusing negatives, consisting of ruled lines photographed down to a small scale, can be bought. Equally satisfactory is a dense negative with lines lightly scratched into it with a needle. An excellent focusing film can be made by brushing a coat of India ink over a piece of clear film so as to make the coat thick at one side and thin at the other. As the ink dries, the coating cracks, forming many fine cracks where the ink was thin and a few wide ones where the ink was thick. Thus the highest possible contrast and a choice of fine or coarse detail is obtained with practically no effort.

If the negative is to be used for lens testing, the scratches should include both concentric circles and radial lines centered on the midpoint of the film. This arrangement will detect astigmatism (Figure 6).

For lens testing with glassless carriers a film is useless because of curl. For this purpose a clean, grease-free piece of glass is given a thin coat of paint and suitable lines are drawn in this coat with a needle.

There is a simple device which is most helpful in critical focusing, the cutout lens cap. (Figure 13) This can be made of cardboard and need not be precise in any respect. To use it, the lens diaphragm is opened wide and the lenscap put on, preferably parallel to any contrasty lines in the negative. If the enlarger is in perfect focus the image will appear as usual. If the focus is even slightly out two more or less distinct images will be seen and, as the correct focus is approached, the two images will move toward each other. This device is particularly suitable for enlargers with bright illumination. In this case the cutout segments may be narrowed down to obtain more distinct twin images.

Photographers have been known to focus their enlargers with the lens stopped down because they believed that the marginal rays of the lens focused to a different plane from the central ones, causing a shift in best focus as the marginal rays were progressively masked off by the diaphragm. I once observed such a shift, amounting to

1/100 of the focal length, in a standard camera lens. Assuming that such a large shift were present in an enlarging lens, it might still be preferable to focus with the lens open. The focusing errors due to the dim light from a small aperture might easily be greater than the focus shift.

If you have reason to suspect such a shift, you can test your lens quite simply by means of a reverse aperture test. Measure the actual diameter of the diaphragm aperture at $f/8$. Cut out a disc of this approximate diameter with suitable bearers, blacken it and drop it into the lens so that it rests on the ring that carries the diaphragm. (Figure 14) Note that with this disc in place all the central rays, those that would normally pass through the lens at $f/8$, are masked out.

Now put a test negative in the enlarger, open the iris diaphragm to full aperture and focus carefully on the center of the image. Mark the position of the focusing adjustment with a fine line on an adjacent surface. This is the focus of the marginal rays.

Next remove the reverse aperture disc and close the iris diaphragm to $f/8$ (or smaller aperture if you customarily use it), refocus and mark the new position of the focusing adjustment. This point will be the focus of the central rays, the distance between the two marks will be the maximum focus shift. As the shift will surely be less than 1/100 of the focal length, the test must be made with great care to avoid error. One of my enlarger lenses, so tested, showed a shift of less than 1/400 of the focal length, a negligible amount.

These comments, necessarily put in a rather negative form, may have given the impression that making an enlargement is like crossing a minefield. On the contrary enlarging under proper conditions with good equipment is enjoyable, creative and trouble-free. Once we have checked the sharpness yielded by our apparatus, we are free to capture, in big beautiful enlargements, a sense of the vastness of the world which other generations, with their tiny prints, could never achieve.

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NOTES AND NEWS

(Continued from page 66)

Studio Finish Dye Chemical

Craig Fotofade is a dye chemical that enables home movie makers to obtain such professional effects as fades and wipes for either old or new film at an economical cost. Dissolved in water, *Fotofade* becomes a permanent dye into which the film may be dipped for the desired effect. Length and density of fades are easily controlled, the manufacturers say, and center, side and cross wipes may be made in a matter of a few minutes.

Use of the chemical is applicable to color as well as black-and-white film and requires no special equipment. The manufacturers offer at no charge, upon request and mention of AMERICAN PHOTOGRAPHY, additional information, film tips and suggestions contained in their *Craig Booklet*. Craig, Inc., Plainville, Conn.

Science Film Strips Offered

The Popular Science Filmstrip-of-the-Month Club has announced the release of first two of this season's production, *Looking at the Stars* and *How Heat Travels*. These film strips are designed for use in secondary schools and a new strip is released each month during the school year. Information about the plan can be obtained from the Club at 353 Fourth Ave., New York.

Wide-Angle Cine Raptor

A new 6.5mm f/1.9 high-speed Raptor has been announced by the Wollensak Optical Co. The lens covers four times the area covered by a normal half-inch lens on an 8mm camera. Because of its great depth of field, focusing is not required.

The Cine Raptor Wide Angle is an eight-element lens, fully color-corrected and coated. The price, including tax, is \$71.88.

Addendum

Scientia Products Co. announces that *Infra-Flash Lacquer*, into which ordinary flash-bulbs may be dipped to eliminate visible light (see AMPHOTO, February, page 9), is not as yet distributed to all dealers throughout the country. Readers having difficulty in purchasing the product will be promptly supplied by the manufacturer upon request. Descriptive literature is available at no charge. Scientia Products Co., P.O. Box 1930, Chicago 90, Ill. Please mention AMERICAN PHOTOGRAPHY when writing.

OPTICS FOR THE PHOTOGRAPHER

by E. Wildi

Knowing something of the laws of optics will help the photographer in understanding what his lenses will do for him and enable him to choose and use them more intelligently. There is no substitute for a thorough knowledge of this field, but this outline will serve as a beginning approach to the subject.

In the following article, I am trying to explain without going too much into detail, the most commonly used optical terms, starting with:

I. THE FOCAL LENGTH

The focal length describes the basic element of every lens. It is a fixed value which does not vary with the circumstances of the use of the lens. The focal length is the precise distance from the rear nodal point of the lens to the plane where an image of an infinitely distant subject is formed. This plane is referred to as the *focal plane*; the point where the plane meets the optical axis is the *focal point*. The *optical axis* is the line that passes through the optical centers of all lens elements.

The *nodal point* is an important term used in the design of lenses and can be considered for practical purposes as the middle of the objective. One exception to this rule are the true *telephoto lenses*. They are optically designed in such a way that the distance from the middle of the lens to the focal plane is much shorter (often two to three times) than the focal length. This permits shorter dimensions of the lens barrel.

The Standard Focal Lengths are:

- 12.5mm ($\frac{1}{2}$ ") for 8mm
- 25mm (1") for 16mm
- 50mm for 35mm still cameras
- 105mm for $2\frac{1}{4} \times 3\frac{1}{4}$ still cameras
- $6\frac{3}{8}$ " for 4 x 5 still cameras
- 8" for 5 x 7 still cameras

They are described as standard because the image is recorded in a very similar way to the human eye.

The focal length indicates two other characteristics of a lens, the *size of the field* included in the picture and the *magnification*. Lenses having a shorter focal length than the standard are known as *wide angle lenses*, because they enable the user to cover a wider area. The shorter the

focal length, the larger the field covered on one and the same film size.

Lenses of longer focal length than the standard are long focal length lenses, telescopic lenses or, if optically correct, telephoto lenses. They are constructed to bring subjects closer, to permit greater magnification and enable close-ups effects of distant subjects.

For one and the same film size, the applied rule is: The longer the focal length, the smaller the area covered but the greater the magnification. This is demonstrated by the following chart for 8 and 16mm movie lenses:

Focal Length		Field Size	Magnifying Power
8mm	16mm		
9mm	15mm	1.7	0.6
$\frac{1}{2}$ "	1"	1	1
1"	2"	$\frac{1}{2}$	2
$1\frac{1}{2}$ "	3"	$\frac{1}{3}$	3
2"	4"	$\frac{1}{4}$	4
3"	6"	$\frac{1}{6}$	6

II. THE APERTURE VALUE

The diaphragm on the lens is the device that controls the amount of light that reaches the film plane. It is an adjustable opening, usually an iris between the *lens elements* marked in "*f*/" or "*T*/" numbers. Each mark on this diaphragm or aperture scale is called a "stop." The *maximum aperture* of an objective is referred to as the *speed* of the lens, and an objective with a relatively large opening is a fast or speed lens.

The *f*/number is the ratio between the focal length and the effective diameter of the diaphragm.

$$f/\text{number} = \frac{\text{Focal Length}}{\text{Diameter of Diaphragm}}$$

The focal length is a fixed dimension, as previously mentioned. Therefore, mathematically speaking, the larger the diameter, the smaller the *f*/numbers. In other words, to increase the amount of light passing through the lens, the diaphragm is brought to a smaller number. The smaller the *f*/number, the larger the opening. The *T*/number refers to the actual amount of light that reaches the film.

III. DEPTH OF FIELD

The image of an infinitely distant object is recorded in the focal plane. If the object distance is less than infinity, we still receive an image but the image distance is now longer than the focal length. To correct this variation, the lens is moved to the correct distance which results in a sharp picture on the film: *we focus the lens*.

For every object distance, there is one defined image distance and theoretically only subjects at that distance are in focus. Points outside the object plane are more or less imaged as blurred circles. The further away a subject is from the plane focused upon, the larger the diameter of the circle, which is defined as the *circle of confusion*. Up to a certain size, however, these blurred circles appear to the human eye as points and are considered sharp. The sizes that have been specified vary from one lens manufacturer to another, but are approximately:

- 1/1000" (1/50mm) = for 8mm
- 1/750" (1/30mm) = for 16mm
- 1/500" for 35mm still cameras
- 1/1000 to 1/1500 of the focal length of the lens for other cameras

The range of object distances within which details are recorded with acceptable sharpness is the *depth of field*. Its characteristics are:

Increase in Depth of Field by	{	The increase in distance
		The decrease of focal length
		The decrease of aperture

Applying these rules to a lens set at infinity, we will discover that everything is recorded sharply from infinity up to a certain closer distance, *hyperfocal distance*, depending on the focal length and the aperture. A fixed focus lens is usually set at the hyperfocal distance because in this position the depth of field is from $\frac{1}{2}$ hyperfocal distance to infinity.

IV. FOCUSING

Focusing mount lenses offer a considerable advantage over a *fixed focus lens*, also called a lens in a *universal focus mount*. A fixed focus lens can record a clear image only when the subject is at a certain minimum distance away from the camera, depending on the diaphragm

opening used. There is no way to bring a subject at a closer distance in accurate focus on the film, unless a supplementary lens is used. A lens in a focusing mount, however, enables you to take perfectly defined and clear-cut close-ups even at widest apertures. Titles, for instance, can be obtained without a supplementary lens which always decreases the optical quality of a good objective.

V. LIGHT

Light is a wave motion possessing the same properties as other electromagnetic waves, such as radio waves, x-rays, gamma rays, which differ from light waves only in their wave lengths. The velocity of light in free space is approximately 186,000 miles per second or 300,000 kilometers per second. Most light beams, including the light of our sun, are polychromatic. That is, they are a mixture of light of different colors, which can easily be demonstrated by letting the light pass through a prism. The result is that the light is *dispersed* into the well-known spectrum, with violet light deviated most and red light least. *Monochromatic light* is light composed of only one color.

The *wave length* of light is dependent upon its color and is:

Color	Wave Length m_{μ}	Fraunhofer Line
Ultraviolet		
(not visible)	Shorter than 400	
Violet	400-450	G
Blue	450-500	F
Green	500-570	
Yellow	570-590	D
Orange	590-610	
Red	610-700	C
Infra-red		
(not visible)	longer than 700	

The wave length is the most accurate specification to indicate the color of light. By close examination of a spectrum of sunlight, a number of dark lines will be found crossing the spectrum. They are called *Fraunhofer Lines* because Fraunhofer first observed them around 1825. The most important ones are G, F, D, and C, and are often found in the diagram showing the correction of an objective, each letter representing the correction for one color, G for violet, F for blue, D for yellow, C for red.

1 micron (μ)	= 0.0001 cm
1 millimicron (m_{μ})	= 0.0000001 cm
1 angstrom (A)	= 0.00000001 cm

(To Be Continued Next Month)

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(Continued from page 78)

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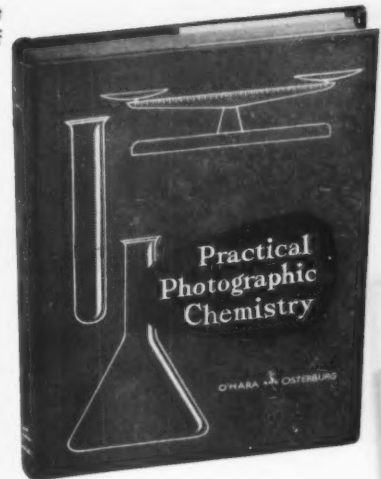
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